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ABSTRACT

A research project was conducted to determine where graduates of two-year college occupational programs in New York State found employment and to assess factors that contributed to placement trends. During fall 1982, questionnaires were mailed to the director of placement at all two-year colleges with approved occupational programs in the state, requesting job placement data by occupational program title and by sex and asking placement officers for their interpretation of locally relevant employment opportunities, on-campus recruitment, and graduate employers. Study findings, based on responses from 52% (N=28) of the colleges surveyed, included the following: (1) 44.1% of the program graduates were employed in the sponsor area, 24.4% in the college's planning region, 15% in a contiguous planning region, 8.8% in a non-contiguous region, and 8.0% out-of-state; (2) when compared with agricultural and technical colleges and independent colleges, community colleges exhibited higher placement rates within their sponsor area; (3) geographic concentration of employment opportunities in various fields and the extent of on-campus recruitment were active factors in graduate mobility; (4) a large majority of the placement officers felt that graduates' county of origin was an important factor in the employment decisions of at least half of the students; and (5) few gender-related mobility trend differences were found. The study report includes a breakdown of survey responses by program and region, and the survey instruments. (LAL)

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**GEOGRAPHIC GEOGRAPHIC
MOBILITY MOBILITY =
POSTSECONDARY POSTSECONDARY
OCCUPATIONAL OCCUPATIONAL
EDUCATION EDUCATION
GRADUATES GRADUATES**

SEPTEMBER, 1983

JC 850 026

Two Year College Development Center
State University of New York at Albany

GEOGRAPHIC MOBILITY OF POSTSECONDARY
OCCUPATIONAL EDUCATION GRADUATES
(VEA 53-83-0347)

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ORGANIZATION OF REPORT

This report is organized into 15 sections. Parts I and II serve to define project intent, rationale and methodology. Part III describes the study's population and response rate. Results on a statewide basis are presented in Part IV. Part V describes the format and mode used for presenting data and their underlying rationale. Parts VI through XI detail data findings for each of the six major technologies. Out-of-state migrations are discussed in Part XII, gender differences in Part XIII. Major data trends are summarized in Part XIV. Conclusions and data implications to research and policies are presented in Part XV.

The reader who seeks a summary of findings and implications is referred to Parts XIV and XV which serve to highlight major results. Parts I through V will be useful to the reader who desires information about project rationale and procedures. The reader seeking detail concerning one or more of the major technologies is directed to Parts VI through XI.

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GEOGRAPHIC MOBILITY OF POSTSECONDARY OCCUPATIONAL EDUCATION GRADUATES

I. Introduction

An important component in the process of gaining approval to offer postsecondary occupational educational programs is the demonstration of locally relevant employment needs and/or opportunities for persons who complete the program. Labor market statistics, employer surveys and compilations of advertised job openings are commonly used evidence to support the need for the program. Community colleges are particularly sensitive to these data because of their mission to serve the needs of their sponsorship community.

Regional planning for occupational education is well established and is an important contributor to the program development process for community colleges as well as for Independent and Agricultural and Technical Colleges which do not have a local sponsor relationship in the same sense as community colleges.

All two-year colleges annually report the employment status of completers including relatedness of employment to the field of training. Many two-year colleges also compile excellent local placement reports for their various constituencies. However there is no statewide data base providing information on the geographic placement trends by program and the factors that contributed to the placement trends.

The first phase of the project, Geographic Mobility of Occupational Education Graduates (VEA 53-83-0347) set out to determine geographic placement trends by program, where graduates of occupational programs found employment, and to the extent possible, identify reasons why. Ultimately the aim of this two-phase project is to provide a more complete data base

of the placement history of occupational education completers and leavers, and the personal and contextual factors active in their employment decisions. This information will be a valuable contribution to the consideration of policies regarding the meaning and importance of locally relevant employment needs and opportunities. Such information also has implications for considerations of economic returns to the investment in postsecondary occupational education programs.

II. Methodology

Specification of data elements and development of survey instruments were done in cooperation with staff of the Bureau of Grants Administration and Bureau of Educational Data Systems. A cooperative decision was made to rely on colleges supplying data already in existence since the time and expense of collecting additional placement data was beyond the scope of this project. For this reason the strategy of seeking participation from all two-year colleges, rather than a sampling procedure, was utilized to maximize potential results. The inclusion of Agricultural and Technical Colleges, Community Colleges and Independent Colleges also allows for the generation of a more complete statewide picture, reflecting the different types of colleges and different geographic priorities regarding mission, recruitment and service relationships that comprise postsecondary occupational education in New York State.

During the late fall of 1982, a letter explaining the project and requesting cooperation was mailed to the Director of Placement at all two-year colleges in New York State which have approved occupational programs except those few single-purpose colleges such as the Culinary Institute of America and the Academy of Aeronautics. A brief response sheet indicating willingness to cooperate with the project and two questionnaires were

enclosed. Each campus President also received an information copy of the letter requesting cooperation.

Questionnaire #1, "Geographic Mobility Summary Form," sought placement data by occupational program title, based on the four-digit Hegis code system used on form NYSED 2, 3. Placement figures were also requested by sex to allow for comparative analysis.

Questionnaire #2, "Placement Director Questionnaire," asked placement officers for their interpretation of locally relevant employment opportunities, on-campus recruitment and employers of their graduates. It also requested additional information and comments they may have on perceived placement trends of their graduates. Duplicates of the letter and both survey instruments appear in Appendix A.

Since policy considerations implicit to this project revolve around interpretations of what is termed locally relevant employment opportunities, no one set of boundaries such as college sponsor area, occupational education planning region, S.M.S.A. or higher education regions could necessarily serve as a preferred unit of analysis. After consultation with State Education Department staff, a matrix system of five geographic categories was devised: within a sponsor area, within an occupational planning region, within a contiguous region, within a non-contiguous region and out-of-state. The 13 occupational education planning regions were used since that was the official configuration when the study began. An example of the matrix (Business and Commerce programs) is subsequently presented:

Example

Category of Employment for Graduates of
Business and Commerce Technologies

Discipline Spec.	code	Placement Totals		Within Sponsor	Within Region	Contig. Region	Non-Contig. Region	Out-of-State
		tot	M'F	M'F	M'F	M'F	M'F	M'F
bus & comm; gen	5001							
accounting	5002							
banking & finance	5003							
m'keting, indus mgmt	5004							
secretarial science	5005							
personal service	5006							
photography	5007							
communic & b'casting	5008							
printing	5009							
hotel & rest	5010							
transp. & utility	5011							
applied arts, graphics	5012							
other	5099							

Total Bus & Comm

Variations to Matrix Titles

The concept of sponsorship area provides a known geographic area for Community Colleges that directly relates to their mission of serving the needs of their community. However, Agricultural and Technical Colleges are state colleges and recruit from across the state. To compensate for their lack of a comparable sponsor area placement directors at ATC's were asked to use the same matrix but disregard the sponsor column.

Independent colleges were asked to use the same matrix and interpret sponsor area as the county in which the college was located.

After consultation with staff of the Bureau of Grants Administration and the CUNY Office of Institutional Research, the geographic categories were renamed for CUNY community colleges since their sponsor area and their planning region are both New York City. The category names were changed as follows:

Sponsor area became New York City
 Within Region became Nassau and Suffolk Counties
 Contiguous Region became Westchester, Rockland and Putnam Counties
 Noncontiguous Region became all other upstate counties
 Out-of-state remained out-of-state

III. Population and Response Rate

The following table details the total statewide population and the project responses as a percentage of the potential population. The number of completers labeled as employed was derived from state records, OEDS 5.8 for 1981 completers and was adjusted for the colleges excluded from the survey.

Table 1

Population, Responding Colleges and Response Rates

Type of College	N	Total Completers Employed	Responding Colleges	Total Place- ment Data Received	% College Response	% Placement Response
SUNY Community Colleges	30	7143	17	4662	57%	65%
SUNY Ag. & Tech. Colleges	6	2770	5	2513	83%	91%
CUNY Community Colleges	8	3786	2	686	25%	18%
Independent Colleges	10	1116	4	356	40%	32%
Totals	54	14,815 ¹	28	8217	52%	55%

Of the 54 colleges surveyed, 28 or 52% provided usable placement information in sufficient detail to be included in the analyses. The 8,217 placements represent 55% of the statewide population. A separate calculation was made of the official number of employed reported by the cooperating colleges

¹Report #1604, Division of Occupational Education Planning and Support Services, Office of Occupational Education, State Education Department.

only. Usable survey data (8,217) are 85% of the employed number reported to the state by the cooperating colleges for 1981 graduates.

The response rate reflects the inability of many colleges to share placement data in the detail requested by the project. Several colleges indicated willingness to try but existing records were insufficient to go beyond the number placed and an estimate of relatedness. Still fewer had records by gender of the graduate. Several colleges responded to the survey with a copy of their local college placement report and project staff made the transformation of the data to the geographic matrix. One large community college submitted numbers placed by sub-program but the lack of geographic detail forced exclusion of their information. The 28 colleges comprising the data source include 5 Agricultural and Technical Colleges, 4 Independent Colleges, and 19 Community Colleges, of which two are in the CUNY system. The response rate for the Placement Director's questionnaire was 63% (N=31).

Although the response rate ideally should be higher, 55% of the population is a strong enough sample to allow calculation of trends. Generalizability will be strongest for Agricultural and Technical Colleges and weakest for CUNY Community Colleges.

Analyses were performed by arraying the data by planning region, type of college and major technology and program. Descriptive statistics were used to summarize and compare results. Information from the Placement Director's questionnaire complements the statistical analyses as additional or explanatory information.

IV. Presentation of Statewide Results

Table 2 summarizes placement information for each major technology group and the five geographic categories from the 28 responding colleges.

Table 2

Distribution of Placements by Major Technology

	N	Sponsor Area	Planning Region	Contiguous Region	Non-Contig Region	Out of State
Business & Commerce	2756	46.7%	29.0%	12.5%	7.0%	4.8%
Data Processing	428	50.0%	26.2%	8.6%	7.5%	7.7%
Mechanical & Engineering	1705	38.1%	18.2%	22.7%	11.7%	9.3%
Health Sciences	1982	54.3%	21.7%	8.8%	5.4%	9.7%
Natural Sciences	739	9.2%	24.0%	31.7%	20.6%	14.6%
Public Service	607	53.9%	28.5%	9.4%	3.5%	4.8%
Total & % of Total	8217	44.1%	24.4%	15.0%	8.5%	8.0%

The statewide summary distribution of the geographic placement data leads to the following general findings:

- a) about half of the placements were in the sponsor area, except for Natural Science and Engineering Technology graduates
- b) approximately one-quarter of the placements were within the colleges' planning regions, except for Engineering graduates
- c) placements in a contiguous planning region were approximately 10% except for Natural Science and Engineering Technology graduates
- d) Non-contiguous region placements account for approximately 5% of the placements, except for Natural Science and Engineering Technology graduates
- e) Out-of-state placement rates range from 5% to 15%.

It is readily apparent that Natural Science and Engineering Technology graduate placement rates deviate from the trends of other technologies most frequently. These differences are particularly marked for Natural Science graduates placed within the sponsor area, contiguous and non-contiguous regions. Engineering graduate placement rates show less extreme deviation, but the distribution generally resembles the pattern of geographic mobility

shown by Natural Science Technology placements.

For all other technologies, approximately 75% of the placements occurred within the sponsor area and planning region. Public Service placements were least likely to be placed geographically beyond the planning region (17.7%), and Public Service and Business graduates were least likely to accept placements out-of-state (4.8%).

While differences in trends among the major technologies are apparent in the statewide data summary, the differences among programs within each major technology and among regions are masked. Therefore data for each major Hegis technology will be arrayed by type of region rather than planning region. The rationale and format used for Business and Commerce will serve as the model and rationale for presenting regional data clustered by type of region.

V. Business and Commerce Data by Planning Region

Table 3 summarizes placements in Business and Commerce by planning region. A map of the planning regions is attached as Appendix B.

Table 3

Business and Commerce Placements by Planning Region

<u>Region</u>	<u>N</u>	<u>Sponsor Area</u>	<u>Within Region</u>	<u>Contiguous Region</u>	<u>Non-Contig Region</u>	<u>Out of State</u>
1-Long Island	300	-	80.7%	16.7%	2.3%	.3%
2-New York City	262	81.6%	18.3%	-	-	-
3-Lower Hudson	160	72.5%	13.7%	5.1%	2.5%	6.2%
4-Capital Dist.	331	19.9%	57.1%	10.9%	6.6%	5.4%
5-Northeast	21	4.7%	9.5%	14.2%	33.3%	38.1%
6-St. Lawrence	94	-	59.6%	22.3%	1.1%	17.0%
7-Mohawk Valley	368	32.1%	13.9%	16.9%	28.3%	9.0%
8-Western Catskill	116	81.8%	13.7%	.8%	-	3.4%
9-Central NY	190	68.4%	15.2%	6.3%	4.2%	5.8%
10-Central West	309	64.1%	15.2%	16.2%	.9%	3.6%
11-Central South	65	92.3%	-	4.6%	1.5%	1.5%
12-Niagara	373	77.7%	17.7%	.8%	.3%	3.5%
13-Southwest	167	-	18.5%	56.8%	20.3%	4.1%
Totals	2756	46.7%	29.0%	12.5%	7.0%	4.8%

An initial review and comparison of these placements reveal what appears to be an extreme variation among regional placement patterns. This diversity can, however, be partially explained by a closer analysis of the types of colleges supplying data in each of the 13 Occupational Education Planning Regions:

- In Regions 1, 6, 13 where no placements are noted in any service or sponsorship area for any program, Agricultural and Technical Colleges are the only colleges reporting and by definition, have no local sponsor area (Type A).
- Region 5 contains low, and in some technologies, no placements in the sponsorship area, and is an artifact of the type of college reporting; a rurally located, residential, Independent College (Type B).
- Two regions, 4 and 7, each have one Agricultural and Technical College and at least two Community Colleges reporting (Type C).
- The data for the remaining regions, 3, 8, 9, 10, 11, 12, are predominantly from SUNY Community Colleges. Of these, only Regions 3 and 12 include data from Independent Colleges, two in Region 12 and one in Region 3. Region 2 data are entirely from CUNY Community Colleges (Type D).

These predominant patterns or groupings of regions by type of colleges will be referred to subsequently as Type A, Type B, Type C, and Type D regions respectively. This clustering affords a more appropriate method of analysis and comparable division of data than strictly by planning regions since the regional differences are really type of college differences. The trends which emerge reflect the differences among the various colleges in terms of mission and relationship to a sponsor area. Table 4 presents the same Business and Commerce data categorized by the four clusterings of region types and provides the contrast to the planning region array shown in Table 3.

Table 4
Business and Commerce Placements
by Type of Region

	Regions	N	Sponsor Area	Within Region	Contiguous Region	Non-Contig Region	Out of State
Type A	1	300	-	80.7%	16.7%	2.3%	.3%
	6	94	-	59.6%	22.3%	1.1%	17.0%
	13	167	-	18.5%	56.8%	20.3%	4.1%
Type B	5	21	4.7%	9.5%	14.2%	32.3%	38.1%
Type C	4	331	19.9%	57.1%	10.9%	6.6%	5.4%
	7	368	32.1%	13.9%	16.9%	28.3%	9.0%
Type D	2	262	81.6%	18.3%	-	-	-
	3	160	72.5%	13.7%	5.1%	2.5%	6.2%
	8	116	81.8%	13.7%	.8%	-	3.4%
	9	190	68.4%	15.2%	6.3%	4.2%	5.8%
	10	309	64.1%	15.2%	16.2%	.9%	3.6%
	11	65	92.3%	-	4.6%	1.5%	1.5%
	12	373	77.7%	17.7%	.8%	.3%	4.1%

For the three Type A regions, individual region differences are readily apparent in each of the geographic categories. The placement rates within region vary from 18.5% to 80.7% and the out-of-state placement rates range from .3% to 17.0%. This variation may be explained in part by the geographic location of college. Farmingdale, Region 1, with a placement rate of 80.7% in their region, is located in the highly populated business market of Long Island. However, Alfred Agricultural and Technical College, Region 13, showing a within region placement rate of 18.5%, is in a rural area with significantly fewer job opportunities in the planning region. Graduates, by necessity if not by choice, must leave the region to find employment. Student county of origin may also partially explain these extreme differences. Of the first time, full-time students in the fall of 1979, 84% of Farmingdale's students were from within region, compared to

15% at Alfred and 42% at Canton.²

The high out-of-state placement rate in Region 5 (38.1%) is reflective in part of Paul Smith's location in rural upstate New York as well as its recruitment procedures, drawing students from across and beyond New York State. It may also reflect its hotel management program which tends to place students out of state more frequently than many other business programs.

Regions 4 and 7, Type C, appear to have quite different placement rates for sponsorship area and within region. For example, Region 4 shows a 19.9% rate for sponsorship area and a 57.1% rate within region, while Region 7 shows 32.1% and 13.9% respectively. The four Community Colleges in Region 4, Columbia-Greene, Fulton-Montgomery, Hudson Valley and Schenectady, each have somewhat limited employment opportunities within their sponsor county compared to that of the eight-county Capital Region which includes Albany County. Student county of origin may again be an active factor; Hudson Valley is the largest college in the region and only 26% of its students are from the sponsor county. In comparison to Region 4, the placement rate in the sponsorship area for Region 7 (32.1%) may indicate greater employment opportunities within the sponsor county, but county of origin may also be active since 67% of Mohawk Valley's students are from the sponsor county. Also, in both cases, the percentage rate in the sponsorship area is lowered by the inclusion of one Agricultural and Technical College, which by definition reports no placements in a sponsor area. This ATC impact is proportionately greater in Region 7 than in Region 4.

²Geographic Origins of Students, Fall 1979, State University of New York, Office of Institutional Research and Analytical Studies, Report 2-81, November 1981.

For Type D regions (13 public Community Colleges and 3 Independent Colleges), an overwhelming majority of placements occur in the sponsorship area. Combining sponsor and within region rates accounts for 79% or greater of all placements for all colleges. The relatively low outward mobility rate exhibited by these regions can be interpreted as being consistent with their mission and evidence that local employment needs and opportunities are being addressed by the colleges.

The differences in contiguous region placements appear to be related to relative concentration of employment opportunities. Alfred ATC in Region 13 places a significant number (57%) of graduates in the Rochester and Buffalo areas, both contiguous planning regions. Canton's contiguous regions include the population centers of Syracuse, Utica and Plattsburgh, and Farmingdale's contiguous region is New York City. Contiguous to Region 7 are both the central and capital population centers.

Only three regions exhibit non-contiguous region placement rates greater than 7%. Region 13 consists of an Agricultural and Technical College and Region 7 includes an Agricultural and Technical College. Region 5 consists of a rurally located Independent College that recruits widely and has a limited locally relevant employment area. It also has the highest out-of-state placement rate. The only other out-of-state placement rate greater than 9% occurred in Region 6, a Type A region.

Since the array of data by types of regions provides a more logical format for comparison and analyses, the more detailed presentation of results by program will utilize these four clusters in the tables of each major technology area.

VI. Analysis by Program: Business and Commerce Technologies

The placement rates for each Business program included in the Type A regions are presented in Table 5.

Table 5

Business Programs from Type A Regions

		N	Sponsor Area	Within Region	Contiguous Region	Non-Contig Region	Out of State
Region 1	Total	330	-	80.7%	16.7%	2.3%	.3%
General Business	149	-	87.2	11.4	.7	.7	
Secretarial	112	-	70.5	25.8	3.5	-	
Technologies	33	-	87.9	12.1	-	-	
Applied Arts/ Graphics	6	-	66.7	33.3	-	-	
Photographic Technologies							
Region 6	Total	94	-	59.6%	22.3%	1.1%	17.2%
General Business	27	-	40.7	33.3	-	25.9	
Accounting	14	-	57.1	28.6	-	14.3	
Banking-Finance	2	-	100.0	-	-	-	
Marketing	9	-	100.0	-	-	-	
Secretarial							
Technologies	32	-	62.5	15.6	3.1	18.8	
Hotel & Restau- rant Mgmt.	10	-	60.0	30.0	-	10.0	
Region 13	Total	167	-	18.5%	66.8%	20.3%	4.1%
General Business	15	-	33.3	66.7	-	-	
Accounting	27	-	18.5	51.9	18.5	11.1	
Banking and Finance	11	-	18.1	27.7	.9	-	
Marketing	42	-	11.9	61.9	19.0	7.1	
Secretarial							
Technologies	62	-	22.5	54.8	22.6	-	
Court Reporter	10	-	-	30.0	60.0	10.0	

The distributions detail which programs contribute to the regional geographic mobility rates. Very few graduates from Region 1 programs were placed beyond New York City, the contiguous region and Secretarial Technologies graduates were numerically highest in contiguous region placements. The small number of persons in Photography cautions against citing that program's higher contiguous region rate as a trend.

From Region 6, General Business, Hotel and Restaurant, Accounting and to a lesser extent, Secretarial Technologies are all contributors to the contiguous region placement rate and to the out-of-state placement rate. Data from the placement officer questionnaire indicate that on-campus employment recruitment is a major factor in this mobility, particularly for out-of-state placements. General Business graduates are most likely to be placed beyond the planning region.

Region 13 graduates, more than those from the other two regions, are significantly more likely to accept employment in contiguous and non-contiguous regions. This may be a function of the college's location as well as student's county of origin. General Business, Marketing, Secretarial Technologies and Accounting are strong contributors to the contiguous region rates, but the Court Reporting program rate of 60% stands out in the non-contiguous region distribution. The out-of-state placements are significantly less than was the case for Region 6, where on-campus recruitment was identified as an important factor in employment decisions.

Table 6

Placement Rates for Business Programs
from Type B Regions

	N	Sponsor Area	Within Region	Contiguous Region	Non-Contig Region	Out of State
Region 5 Total	21	4.7%	9.5%	14.2%	33.3%	38.1%
Hotel & Restaurant Mgmt.	18	5.5	11.1	11.1	27.8	44.5
Travel and Tourism	3	-	-	33.3	66.7	-

The location and character of the college and the programs in the Type B region tend to explain the wide mobility trends shown by the data. There is little doubt that Hotel program internships with Walt Disney College and Marriott (Chicago, Illinois) influence program graduates to be offered and accept out-of-state employment.

The placement rates for each Business program included in the Type C regions are presented below:

		Table 7					
		Placement Rates for Business Programs for Type C Regions					
		N	Sponsor Area	Within Region	Contiguous Region	Non-Contig Region	Out of State
Region 4	Total	331	19.9%	57.1%	10.9%	6.6%	5.4%
General Business		35	75.0	22.2	-	2.8	-
Accounting		71	32.5	54.9	8.4	1.4	2.8
Banking and Finance		10	10.0	90.0	-	-	-
Marketing		52	5.8	53.8	15.4	15.4	9.6
Secretarial Technologies		110	7.3	68.2	14.5	6.4	3.6
Printing and Lithography		1	-	100.0	-	-	-
Hotel & Restau- rant Mgmt.		43	7.0	51.2	13.9	11.6	16.3
Transportation		8	12.5	87.5	-	-	-
Region 7	Total	368	32.1%	13.9%	16.9%	28.3%	9.0%
General Business		67	16.4	14.9	25.4	34.3	9.0
Accounting		60	53.3	16.7	8.3	15.0	6.7
Banking and Finance		12	66.7	-	25.0	8.3	-
Marketing		11	27.3	27.3	9.0	27.3	9.0
Secretarial Technologies		75	34.7	10.7	20.0	22.7	12.0
Photography		1	100.0	-	-	-	-
Communications		33	21.2	15.2	9.0	45.5	9.0
Hotel & Restau- rant Mgmt.		25	-	12.0	12.0	68.0	8.0
Applied Graphic Arts		40	35.0	2.5	15.0	32.5	15.0
Court Reporting		3	66.7	33.3	-	-	-
Travel and Tourism		41	34.1	24.4	21.9	14.6	4.9

The data from both Regions 4 and 7 are heavily influenced by an Agricultural and Technical College within each. Region 4 data is further influenced toward the within group category by a large Community College drawing most of their students from the region but not their sponsor county. The generally low outward mobility trends are primarily composed of graduates from Marketing, Hotel, Secretarial Technologies and Accounting program graduates.

The outward mobility is greater in Region 7 and nearly all programs contribute to these trends. The more central location of Region 7 in the state may impact the contiguous region trends, but the county of origin at the Agricultural and Technical College (20% within region) appears to be related to the non-contiguous region rates which are greater in Region 7 as compared to Region 4. Hotel, General Business, Communications and Broadcasting and Applied Graphic Arts are the programs with higher rates of outward mobility. Marketing and Secretarial Technologies graduates also display significant outward mobility trends.

Table 8

Placement Rates for Business Programs
from Type D Regions

	N	New York City	Nassau Suffolk	W'chester Putn-Rock	Other Upstate	Out of State
Region 2 Total	262	81.6%	18.3%	-	-	-
General Business	130	80.8	19.2	-	-	-
Accounting	37	78.4	21.6	-	-	-
Marketing	2	100.0	-	-	-	-
Secretarial Technologies	93	83.9	16.1	-	-	-

(continued)

Table 8 (continued)

	N	Sponsor Area	Within Region	Contiguous Region	Non-Contig Region	Out of State
Region 3 Total	160	72.5%	13.7%	5.1%	-	5.2%
General Business	23	69.6	13.0	13.0	-	4.4
Accounting	29	82.8	6.9	3.4	-	6.9
Marketing	35	65.7	20.0	2.9	5.7	5.7
Secretarial Technologies	38	89.5	2.6	5.3	-	2.6
Communications & Broadcasting	19	36.8	31.6	-	10.5	21.1
Applied Arts- Graphics	12	91.7	-	8.3	-	-
Legal Assistant	4	25.0	75.0	-	-	-
Region 8 Total	116	81.8%	13.7%	.8%	-	3.4%
Accounting	27	88.9	11.1	-	-	-
Marketing	47	87.2	8.5	-	-	4.3
Secretarial Technologies	42	71.4	21.4	2.4	-	4.8
Region 9 Total	190	68.4%	15.2%	6.3%	4.2%	5.8%
General Business	29	34.6	37.9	20.7	3.4	3.4
Accounting	36	66.7	16.7	5.5	8.3	2.8
Marketing	75	82.7	5.3	-	5.3	6.7
Secretarial Technologies	30	63.3	20.0	10.0	-	6.7
Communications & Broadcasting	17	70.5	11.8	5.8	-	5.8
Applied Graphic Arts	3	100.0	-	-	-	-
Region 10 Total	309	64.1%	15.2%	16.2%	.9%	3.6%
General Business	55	65.5	30.9	1.8	-	1.8
Accounting	40	82.5	12.5	2.5	-	2.5
Banking and Finance	1	100.0	-	-	-	-
Marketing	22	54.6	13.6	22.7	-	9.1
Secretarial Technologies	110	66.4	15.5	13.6	.9	3.6
Communications & Broadcasting	3	-	-	33.3	33.3	33.3
Foods & Restau- rant Mgmt.	18	77.7	11.1	5.6	5.6	-
Applied Graphic Arts	12	58.3	8.3	33.3	-	-
A/V Technologies	14	100.0	-	-	-	-
Travel & Tourism	34	23.5	5.9	64.7	-	5.9

(continued)

Table 8 (continued)

	N	Sponsor Area	Within Region	Contiguous Region	Non-Contig Region	Out of State
Region 11 Total	65	92.3%	-	4.6%	1.5%	1.5%
General Business	38	89.7	-	5.1	2.6	2.6
Accounting	11	100.0	-	-	-	-
Marketing	3	100.0	-	-	-	-
Secretarial Technologies	12	91.7	-	8.3	-	-
Region 12 Total	373	77.7%	17.7%	.8%	.3%	3.5%
General Business	147	62.6	32.6	.7	-	4.1
Accounting	14	50.0	35.8	7.1	-	7.1
Marketing	7	100.0	-	-	-	-
Secretarial Technologies	135	91.1	6.7	.7	-	1.5
Photography	3	100.0	-	-	-	-
Communications & Broadcasting	12	83.3	-	-	8.3	8.3
Hotel and Foods	43	83.7	9.3	-	-	7.0
Applied Graphic Arts	10	100.0	-	-	-	-
Fashion Merchandising	2	100.0	-	-	-	-

As was noted earlier, the Type D regions, which are totally or predominantly comprised of Community Colleges, display significantly less outward mobility, as evidenced by placement rates beyond sponsor and planning region columns. Region 2 placements are all within New York City and Long Island. All other regions show at least 79% of the placements included in the sponsor and region columns.

Scanning all regions for larger outward mobility rates finds Communications and Broadcasting in Regions 3 and 10 exhibiting larger rates in non-contiguous and out-of-state placements. In the contiguous region column, Region 10 displays a rate significantly higher than the other Type D regions (16.2%). The programs that are the larger contributors to this rate are

Travel and Tourism, Applied Graphic Arts, Communications and Broadcasting and to a lesser degree, Marketing. Placement Officers' comments noted that in several fields graduates must go where the jobs are and these programs, except for Marketing, tend to be somewhat more mobile in terms of opportunities. The geographic location of Region 10 may be a factor; their contiguous regions include the metropolitan areas of Buffalo and Syracuse.

The three Independent Colleges that are included in these regions display mobility rates that closely resemble Community Colleges and are very different from those found in the Type B region. These Independent Colleges are more apt to recruit and place locally and are more commuter-based than residential colleges.

VII. Analysis by Program: Data Processing Technologies

Since there are relatively few programs in this technology area, all programs will be presented by type of region in one table. The Type B region was omitted because no placements were reported from the cooperating colleges from Regions 5 and 8.

The rate trends for the three Type A regions show a relative consistency between Regions 1 and 6. Region 13, however, shows a significantly lower placement rate within the region which may be a function of its geographic location and the relatively fewer data processing employment opportunities within the region compared to contiguous regions which encompass Buffalo and Rochester metropolitan areas. Each region has approximately the same out-of-state rate, consistent with those found in Business Technologies.

The Type C regions reflect the Agricultural and Technical College influence in the general distribution. As was the case with Business placements, Region 4 overall has a higher within-region rate, using the Capital District as an employment area, while Region 7 has the higher

Table 9

Placements by Program and Region for Data Processing Technologies

Region	Type A Regions	N	Sponsor Area	Within Region	Contig Region	Non-Contig Region	Out of State
1	Data Processing General	29	-	75.9	13.8	-	10.3
6	Data Processing General	8	-	62.5	25.0	-	12.5
13	Data Processing General	17	-	29.4	47.0	11.7	11.7
<u>Type C Regions</u>							
4	Data Processing General	17	-	29.5	35.3	17.6	17.6
4	Key punch and Operating Programmer	1	100.0	-	-	-	-
4	Programmer	33	21.2	66.7	3.0	3.0	6.1
7	Data Processing General	16	62.5	25.0	-	12.5	-
7	Programmer	26	46.2	3.3	19.2	15.4	15.4
<u>Type D Regions</u>							
2	Data Processing General	30	80.0	20.0	-	-	-
2	Programmer	4	50.0	-	-	50.0	-
2	Data Processing Equipment Maintenance	54	46.3	22.2	-	20.4	11.1
3	Data Processing General	41	78.1	14.6	2.4	-	4.9
9	Data Processing General	28	57.1	21.5	10.7	-	10.7
9	Programmer	7	14.3	57.1	14.3	14.3	-
10	Data Processing General	13	30.8	69.2	-	-	-
10	Programmer	8	25.0	12.5	37.5	-	25.0
11	Data Processing General	25	68.0	-	8.0	20.0	4.0
12	Data Processing General	58	87.9	7.0	1.7	1.7	1.7
12	Operator and Equipment Maintenance	13	76.9	-	-	-	23.1
Total Sample		428	50.0%	26.2%	8.6%	7.5%	7.7%

within-sponsor area rate. The higher outward mobility trends in the contiguous, non-contiguous and out-of-state columns reflect the more outwardly mobile trends of Agricultural and Technical College graduates.

The diversity of rates among Type D regions is also apparent although they are generally higher in the sponsor and within region columns. General Data Processing graduates display less outward mobility than graduates from Programmer, Operator and Equipment Maintenance programs. Comments from Placement Officers tend to reinforce the conventional understanding that Data Processing graduates have wider employment opportunities and can go wherever the best opportunities exist, if they are inclined, more easily than graduates of other programs. Overall, however, 76% of the Data Processing graduates accepted placement within the sponsor and planning region.

VIII. Analysis by Program: Mechanical and Engineering Technologies

The placement rates for each program within Mechanical and Engineering Technologies reported by the Type A regions are presented in Table 10.

The among-region (college) differences are as marked for Engineering as they were for Business and Data Processing. Region 1 again displays higher within region rates and Region 13 has the higher rates distributed across the columns. The Region 6 distribution shows a heavy concentration of placements in contiguous regions which may be a reflection of the lack of relevant employment opportunities in the north country. As was the case for other technologies, Region 13 graduates appear to be most apt than other Type A region graduates to locate employment in non-contiguous regions and out-of-state.

The generally higher out-of-state rates for individual programs, particularly from Region 13, reflect recruiting on the campuses as well as generally greater employment opportunities in these technologies in other

states. Graduates' locations include Texas, Connecticut, Virginia, Vermont and Pennsylvania.

Table 10
Placement Rates for Mechanical & Engineering Programs
from Type A Regions

		N	Sponsor Area	Within Region	Contiguous Region	Non-Contig Region	Out of State
Region 1	Total	118	-	76.3%	13.6%	4.2%	5.9%
Mechanical & Engineering Gen	17	-	82.3	-	-	-	17.6%
Aeronautical & Aviation Tech	5	-	60.0	20.0	20.0	-	-
Automotive Tech	24	-	75.0	12.5	8.3	4.2	-
Civil Tech	6	-	66.7	33.3	-	-	-
Electro Mechan- ical Tech	40	-	77.5	12.5	5.0	5.0	-
Construction Technology	11	-	81.8	18.2	-	-	-
Air Conditioning Technology	15	-	73.3	20.0	-	6.7	-

Region 6	Total	94	-	-	85.1%	4.2%	10.6%
Automotive Tech	11	-	-	90.9	-	9.1	-
Civil Tech	4	-	-	100.0	-	-	-
Electro Mechan- ical Tech	30	-	-	76.7	13.3	10.0	-
Industrial Tech	3	-	-	100.0	-	-	-
Construction & Building Tech	19	-	-	83.3	16.7	-	-
Mechanical Tech	12	-	-	89.4	-	10.5	-
Air Conditioning Technology	15	-	-	86.7	-	13.3	-

Region 13	Total	142	-	13.4%	52.1%	17.6%	16.9%
Mechanical & Engineering Gen	14	-	-	57.1	28.6	14.3	-
Architectural Drafting	36	-	19.4	47.2	16.7	16.7	-
Automotive Tech	5	-	20.0	40.0	-	40.0	-
Civil Tech	12	-	16.7	33.3	16.7	33.3	-
Electronics & Machine	28	-	14.3	60.7	14.3	10.7	-
Industrial Tech	15	-	6.7	80.0	6.7	6.7	-
Construction Tech	25	-	12.0	48.0	24.0	33.3	-
A/V Technologies	7	-	14.3	28.6	28.6	28.6	-

The employers range from newer engineering speciality companies to defense contractors and shipyards. Placement Officers report higher salary and position levels, and company growth and advancement potential as some of the benefits offered by out-of-state recruiters.

In general the outward mobility trends do not appear to be related to any one program across regions, but tend to change from region to region.

The placement data for the Type B Region 5 is comprised of six graduates in Civil Technology. Two were placed within the region, three in a non-contiguous region and one out-of-state.

The placement rates for Type C regions are presented in Table 11.

The distribution of placement rates in both regions is again affected by the mixture of Agricultural and Technical Colleges with Community Colleges. As was the case for technologies presented previously, the ATC influence is greater in Region 7, producing higher rates in the contiguous and non-contiguous region columns while Region 4 is characterized by larger within-region rates, consistent with the county of origin proportion active at that region's larger Community College. The higher within-region rates in Region 4 and contiguous region rates in Region 7 are similar to those found in other technologies for those regions.

In many programs, General Engineering, Chemical, Civil and Automotive Technology for example, the outward mobility patterns seem to differ between regions. However, the small numbers of graduates from some programs caution against generalizations. Comments from Placement Directors indicate that students have many opportunities from which to choose. Employment opportunities in the Rochester area were noted for attracting graduates in Chemical, Electronic and General Engineering programs.

Table 11
Placement Rates for Mechanical & Engineering Programs
from Type C Regions

		N	Sponsor Area	Within Region	Contiguous Region	Non-Contig Region	Out of State
Region 4	Total	175	13.1%	46.9%	14.9%	11.4%	13.7%
Mech & Eng Gen	10	80.0	10.0	-	-	10.0	
Chemical Tech	2	-	50.0	-	-	50.0	
Automotive Tech	2	50.0	-	50.0	-	-	
Civil Tech	13	7.7	92.3	-	-	-	
Electronics & Machine	60	11.7	45.0	15.0	21.7	6.6	
Industrial Tech	31	6.5	58.1	12.9	9.6	12.9	
Mechanical Tech	32	-	37.5	34.4	9.4	18.7	
Construction Tech	14	21.4	64.4	7.1	7.1	-	
Non-Destructive Technology	11	9.1	18.2	-	-	72.7	
Region 7	Total	281	18.1%	7.4%	34.5%	28.1%	11.7%
Mech & Eng Gen	15	-	13.3	26.7	60.0	-	
Engineering Graphics	14	14.3	-	57.2	7.1	21.4	
Architectural Technology	14	-	-	21.4	71.4	7.1	
Chemical Tech	14	-	14.3	35.7	50.0	-	
Automotive Tech	52	7.8	13.4	23.1	50.0	5.7	
Welding Tech	5	60.0	-	20.0	-	20.0	
Civil Tech	26	30.8	7.7	30.8	11.5	19.2	
Electronics & Machine	79	21.5	3.8	49.4	19.0	6.3	
Mechanical Tech	13	38.5	7.6	38.5	15.4	-	
Construction Tech	27	40.8	3.7	37.0	7.4	11.1	
Agricultural Mech & Engineering	22	13.7	-	13.7	18.1	54.5	

Non-destructive Testing (NDT) and Agricultural Engineering rates stand out in the out-of-state column. Both are specialty areas with uncommonly broad opportunities. The uniqueness of the NDT program provides graduates with a broad range of possibilities. Although many are employed by General Electric, the major employer in the sponsor area, they can be and are employed out-of-state by General Electric with equal ease. National

employers with sponsor area and out-of-state locations can have an impact on the geographic mobility of graduates of any program, but it appears to be especially true in this more unique technology program.

The placement rate detail for Engineering programs in Type D regions is presented in Table 12.

Table 12

Placement Rates for Mechanical & Engineering Programs
in Type D Regions

		N	Sponsor Area	Within Region	Contiguous Region	Non-Contig Region	Out of State
Region 2	Total	174	45.9%	23.5%	3.4%	13.7%	13.2%
Chemical Tech	1	-	-	100.0	-	-	-
Electronics & Machine	118	48.3	24.6	2.5	12.7	11.9	-
Mechanical Tech	34	38.2	23.5	-	17.7	20.6	-
Design Drafting	21	47.6	19.0	9.5	14.3	9.6	-
Region 3	Total	73	69.8%	10.9%	5.5%	1.3%	12.3%
Engineering Graphics	8	37.5	12.5	12.5	12.5	25.0	-
Architectural Technology	8	75.0	12.5	12.5	-	-	-
Electronics & Machine	39	71.8	15.4	5.1	-	7.7	-
Electromechanical	8	75.0	-	-	-	25.0	-
Industrial Tech	10	80.0	-	-	-	20.0	-
Region 8	Total	91	56.0%	8.7%	8.7%	16.4%	9.8%
Chemical Tech	19	21.0	-	5.3	52.6	21.1	-
Civil Tech	8	75.0	-	12.5	12.5	-	-
Industrial Tech	9	66.7	11.1	22.2	-	-	-
Mechanical Tech	13	69.2	7.7	7.7	15.4	-	-
Electrical Eng Technology	42	61.9	14.3	7.1	4.8	11.9	-
Region 9	Total	64	60.9%	14.0%	15.6%	6.2%	3.1%
Engineering Graphics	4	75.0	-	25.0	-	-	-
Chemical Tech	2	-	50.0	50.0	-	-	-
Electronics & Machine	36	50.0	19.4	22.2	8.3	-	-
Mechanical Tech	9	100.0	-	-	-	-	-
Construction Tech	13	69.2	7.7	-	7.7	15.4	-

(continued)

Table 12 (continued)

	N	Sponsor Area	Within Region	Contiguous Region	Non-Contig Region	Out of State
Region 10 Total	143	76.9%	6.2%	5.5%	2.7%	8.3%
Mechanical & Engineering Gen	5	-	100.0	-	-	-
Architectural Technology	10	40.0	10.0	10.0	20.0	20.0
Chemical Tech	5	100.0	-	-	-	-
Civil Tech	7	-	85.7	-	-	14.3
Electronics & Machine	31	96.8	-	-	-	3.2
Instrumentation Technology	20	100.0	-	-	-	-
Mechanical Tech	26	92.6	-	-	3.8	3.8
Modelmaking	17	-	17.6	41.2	5.9	35.3
Optical & Bio-medical	22	95.5	-	-	-	4.5
Region 11 Total	52	51.9%	-	17.3%	28.8%	1.9%
Chemical Tech	4	50.0	-	-	50.0	-
Automotive Tech	2	100.0	-	-	-	-
Electronics & Machine	25	36.0	-	28.0	32.0	4.0
Industrial Tech	1	100.0	-	-	-	-
Mechanical Tech	20	65.0	-	10.0	25.0	-
Region 12 Total	292	74.7%	7.5%	16.8%	-	1.2%
Mechanical & Engineering Gen	62	69.4	4.8	24.2	-	1.6
Architectural Technology	27	59.3	29.6	11.1	-	-
Chemical Tech	13	61.5	-	38.5	-	-
Automotive Tech	14	100.0	-	-	-	-
Civil Tech	18	100.0	-	-	-	-
Electronics & Machine	83	73.4	3.6	20.5	-	2.4
Electromechanical	12	58.3	16.7	25.0	-	-
Industrial Tech	1	100.0	-	-	-	-
Mechanical Tech	45	73.4	13.3	13.3	-	-
Construction Tech	17	100.0	-	-	-	-

Table 12 presents in detail the individual program placement distributions from the regions that are totally or predominantly comprised of community colleges. The general outward mobility rates are significantly lower than most other regions, a trend that has been consistent across other technology areas for this type of region.

Region 2 Engineering Technology graduates show a slightly greater tendency to be placed out-of-state and in non-contiguous upstate counties than their peers from other technologies. Bell Laboratories in New Jersey was mentioned as a major out-of-state employer for Region 2 graduates. Rochester area firms were indicated as major employers from non-contiguous regions. Recruitment activity was stated as being highest in these technology programs.

Region 3 placement rates reflect the opportunities in the region (IBM) as well as in neighboring Connecticut.

Region 8 placements vary somewhat among programs. The Rochester area in general and Eastman Kodak in particular were mentioned as major non-contiguous region employers for Chemical and other technology graduates. Pennsylvania is out-of-state but has locally relevant employment opportunities for Region 8 graduates since employers can be within commuting distance.

Region 9 rates in the contiguous region column are also in part a function of employment opportunities in the Rochester area. Both Regions 8 and 9, however, show large majorities of graduates placed within sponsor and planning region, except in Chemical Technology.

Region 10, the receiving region for many graduates, displays greater opportunities in the sponsor area with unusually high sponsor and region rates. Architectural and Modelmaking program graduates comprise nearly all the outward mobility cases. The Modelmaking program appears to be somewhat like NDT and other one-of-a-kind programs; outward mobility potential is greater.

Region 11 trends are higher than others in non-contiguous placements, primarily from two programs, Electronics and Mechanical Technologies. The lack of within region placements may reflect the employment opportunities

of the sponsor area and other regions in contrast to Region 11 itself.

Region 12 closely reflects Region 10 distributions with the exception of a greater percentage of graduates placed in a contiguous region. Again, the Rochester area was mentioned as a major recruiting area for Chemical and Electromechanical graduates.

Overall the Type D regions place higher percentages within sponsor area and respective planning regions than other type regions. The exception is Region 1, represented, perhaps unfairly, by an Agricultural and Technical College, but with geographic placement trends more like Community Colleges than upstate Agricultural and Technical Colleges. Region 10 appears to be a receiver of graduates from other regions as well as employing high percentages of their own local graduates. While the regions are similar, each has its own opportunity characteristics which impact the placement rates.

IX. Analysis by Program: Health and Paramedical Technologies

The placement rates for Health and Paramedical programs included in the Type A regions are presented in Table 13.

These data show differences among the regions that tend to mirror those of other technology areas. Region 1 has high placement rates within their region and very low rates beyond the contiguous region of New York City. Region 6 displays a moderate tendency toward contiguous region placements and exceeds the other regions in out-of-state rates. Region 13 placed fewest in their region, most in contiguous and non-contiguous regions. The relative number of opportunities available in each region and each region's geographic location to population centers appear to be active factors.

The out-of-state placement rates for Nursing graduates is particularly

Table 13
Placement Rates for Health Services & Paramedical Programs
from Type A Regions

		N	Sponsor Area	Within Region	Contiguous Region	Non-Contig Region	Out of State
Region 1	Total	129	-	84.4%	9.3%	1.5%	4.6%
Dental Hygiene		35	-	85.7	14.3	-	-
Medical Lab Tech		29	-	93.1	3.4	3.4	-
Nursing, RN		43	-	86.0	4.7	-	9.3
Veterinary Science		22	-	68.2	18.2	4.5	9.1
Region 6	Total	65	-	55.3%	21.5%	-	23.1%
Medical Lab Tech		9	-	66.7	33.3	-	-
Nursing, RN		49	-	55.1	18.4	-	26.5
Chem Lab Tech		7	-	42.9	28.6	-	28.6
Region 13	Total	142	-	13.3	44.3	23.2	19.0
Medical Lab Tech		23	-	17.4	47.8	17.4	17.4
Nursing, RN		56	-	16.1	33.9	26.9	23.2
Medical Record Technology		12	-	25.0	41.7	25.0	8.3
Medical Assistant		32	-	9.4	56.3	15.6	18.8
Chem Lab Tech		19	-	-	52.6	31.6	15.8

high in both upstate regions. Many of these graduates were recruited by hospitals from Texas. The advantages offered included climate, higher salary, growth and promotion prospects and new, modern facilities. Contiguous and non-contiguous placements went to larger hospitals and health care agencies in Syracuse, Rochester and Buffalo metropolitan areas. The Associate degree nurse and Chemical Lab Technician are the most outwardly mobile groups.

No Health Technology placements were reported from Region 5, the Type B region.

The Health Technology program distributions for Type C Regions 4 and 7 are presented in Table 14.

Table 14
Placement Rates for Health and Paramedical Programs
from Type C Regions

		N	Sponsor Area	Within Region	Contiguous Region	Non-Contig Region	Out of State
Region 4	Total	149	22.8%	44.3%	10.7%	15.4%	6.7%
	Dental Assistant	20	15.0	60.0	20.0	-	5.0
	Dental Hygiene	28	25.0	35.7	7.2	32.1	-
	Medical Lab Tech	22	13.6	50.0	13.6	9.2	13.6
	Nursing, RN	47	31.9	38.3	4.3	14.9	10.6
	Inhalation Therapy	20	20.0	60.0	5.0	10.0	5.0
	Mortuary Science	9	-	22.3	44.4	33.3	-
	Human Services	3	66.7	33.3	-	-	-
Region 7	Total	109	36.1%	13.8%	16.6%	17.5%	15.7%
	Medical Lab Tech	12	-	15.7	33.3	33.3	16.7
	Nursing, RN	96	40.6	13.6	14.6	15.6	15.6

Overall, two out of three graduates in Region 4 remain in the region compared to about half of Region 7 graduates. The impact of Agricultural and Technical College graduates is present in both regions but slightly more in Region 7 where student ratio is higher. The Region 4 distribution again shows the greater employment opportunities of the Capital Region compared to the sponsor area of the colleges. Mortuary Science graduates display greatest outward mobility, a characteristic of a unique program offering that was demonstrated by Modelmaking and NDT in the Engineering Technologies. Nursing graduates also display some outward mobility but less than Region 6 and 13 graduates. Dental Hygiene (Region 4) and Medical Lab Technologies (Region 7) both display high non-contiguous region placement rates that are in part consistent with wider mobility trends of Agricultural and Technical College graduates and in part the demand for dental hygienists.

Table 15

Placement Rates for Health and Paramedical Programs
from Type D Regions

		N	Sponsor Area	Within Region	Contiguous Region	Non-Contig Region	Out of State
Region 2	Total	139	56.1%	30.9%	.7%	1.4%	10.8%
Medical Lab Tech	3	-	-	33.3	66.7	-	-
Nursing, RN	136	57.4	31.6	-	-	11.0	-
Region 3	Total	232	69.4%	14.2%	3.9%	2.2%	10.3%
Dental Assistant	12	66.7	8.3	-	-	25.0	-
Dental Lab Tech	4	50.0	25.0	-	-	25.0	-
Medical Lab Tech	17	64.7	11.8	-	-	23.5	-
Nursing, RN	165	68.5	15.8	4.8	3.0	7.9	-
Nursing, LPN	24	87.5	12.5	-	-	-	-
Medical Assistant	10	60.0	-	10.0	-	30.0	-
Region 8	Total	96	52.0%	15.6%	4.1%	8.3%	19.7%
Dental Hygiene	18	22.2	5.6	22.2	16.7	33.3	-
Medical Lab Tech	6	50.0	-	-	33.3	16.7	-
Radiologic Tech	3	33.3	33.3	-	33.3	-	-
Nursing, RN	52	55.8	25.0	-	-	19.2	-
Medical Records	11	72.7	-	-	18.2	9.1	-
Medical Assistant	6	83.3	-	-	-	16.7	-
Region 9	Total	89	60.6%	16.6%	6.7%	4.5%	11.3%
Dental Hygiene	16	75.0	25.0	-	-	-	-
Medical Lab Tech	3	66.7	-	33.3	-	-	-
Nursing, RN	51	64.7	15.7	7.8	1.9	3.9	-
Inhalation Therapy	19	36.8	15.8	5.3	15.8	26.3	-
Region 10	Total	219	73.9%	14.1%	6.3%	.9%	4.5%
Dental Hygiene	25	96.0	4.0	-	-	-	-
Medical Lab Tech	13	92.3	-	-	-	7.7	-
Radiology Tech	11	72.7	27.3	-	-	-	-
Nursing, RN	160	67.5	16.9	8.8	1.2	5.6	-
Medical Records	7	100.0	-	-	-	-	-
Institutional Management	3	100.0	-	-	-	-	-
Region 11	Total	73	61.6%	-	17.8%	2.7%	17.8%
Radiology Tech	7	57.1	-	28.7	-	14.2	-
Nursing, RN	66	62.1	-	16.7	3.0	18.2	-

(continued)

Table 15 (continued)

		N	Sponsor Area	Within Region	Contiguous Region	Non-Contig Region	Out of State
Region 12	Total	541	83.9%	9.1%	.7%	1.3%	5.0%
Dental Assistant	6	83.3	16.7	-	-	-	-
Dental Hygiene	34	97.1	-	-	-	-	2.9
Dental Lab Tech	8	100.0	-	-	-	-	-
Medical Lab Tech	30	73.3	23.3	-	-	-	-
Radiology Tech	30	60.0	6.7	-	6.7	26.6	-
Nursing, RN	248	83.9	11.3	.8	-	4.0	-
Occupational Therapy	39	94.8	-	-	2.6	2.6	-
Surgical Tech	22	54.6	22.7	4.5	9.1	9.1	-
Optical Tech	58	96.6	-	-	1.7	1.7	-
Medical Assistant	17	100.0	-	-	-	-	-
Inhalation Therapy	28	85.7	-	3.6	3.6	7.1	-
Electro- diagnostic	12	41.7	50.0	-	-	8.3	-
Emergency Med Technology	9	100.0	-	-	-	-	-

As shown in Table 15, Type D regions again display overall higher placement rates in sponsor and planning region columns. The reader is reminded that for Region 2, within region was changed to Long Island, which when combined with the sponsor, New York City, accounts for 87% of the placements. The total out-of-state rate is comprised of Nursing graduates.

Region 3 placements in sponsor area plus planning region include nearly 85% of all graduates. The proximity of that region to Connecticut, like Region 2 to New Jersey, is a factor in the out-of-state placement rates. One hospital in Connecticut was listed as a major employer, but it is also within commuting distance for many graduates.

Region 8 shows a slightly higher placement rate in the non-contiguous region, primarily Region 10, the Rochester metropolitan area. Region 8 is also a border region, and Placement Officer comments from this region and Region 11 state that large health care facilities in Pennsylvania are within

commuting distance and become locally relevant employers. Region 8 also enrolls a significant number of Pennsylvania residents. Region 11 data also show the demand for Health Technicians from the contiguous region, the Rochester area.

Region 12, encompassing the second largest metropolitan area of the state, shows the lowest outward mobility placement rate beyond the planning region and the highest sponsor area rate of all regions. Radiology is the program that contributes most to the (low) 5% out-of-state overall rate. Regions 10 and 12 appear to be receiver regions in the Health Technologies as well as high employers of local region graduates. Unlike Type A regions where out-of-state recruitment was perceived to be a major factor in placements, there is more of a neighbor state effect for several Type D regions that operationally makes out-of-state a locally relevant employment opportunity for in-state residents.

X. Analysis by Program: Natural Science Technologies

The placement rates for Natural Science programs included in the Type A regions are presented below.

Table 16

Placement Rates for Natural Science Programs from Type A Regions

		N	Sponsor Area	Within Region	Contiguous Region	Non-Contig Region	Out of State
Region 1	Total	88	-	73.9%	17.0%	2.3%	6.8%
Natural Science							
General	5	-	100.0	-	-	-	-
Agricultural Tech	71	-	71.8	18.3	2.8	7.0	
Food Services							
Technology	12	-	75.0	16.7	-	8.3	
Region 6	Total	74	-	-	93.3	1.4	5.4
Agricultural Tech	21	-	-	100.0	-	-	
Food Services							
Technology	6	-	-	100.0	-	-	
Lab Tech, Gen	6	-	-	100.0	-	-	
Mortuary Science	20	-	-	100.0	-	-	
Veterinary Science	21	-	-	75.0	5.0	20.0	

Table 16 (continued)

	N	Sponsor Area	Within Region	Contiguous Region	Non-Contig Region	Out of State
Region 13 Total	122	-	20.4%	48.3%	18.0%	13.1%
Agricultural Tech	106	-	18.9	46.2	19.8	15.1
Food Services Technology	11	-	27.3	63.6	9.1	-
Parks and Grounds Management	5	-	40.0	60.0	-	-

The placement rates for Type A region Natural Science Technologies present similar trends and differences among the regions that were present in previous technology areas. Region 1 places over 90% in Long Island and New York City, Region 6 places over 93% in contiguous regions and Region 13 places more students both across the State and out-of-state. These rates reflect employment opportunities as well as geographic locations of the regions. Many of the out-of-state placements from Region 13 are Agriculture-Floriculture program graduates with a majority locating in Pennsylvania.

Natural Science placements from Region 5, the Type B region are detailed below.

Table 17

Placement Rates for Natural Science Programs
from Type B Regions

	N	Sponsor Area	Within Region	Contiguous Region	Non-Contig Region	Out of State
Region 5 Total	28	-	14.3%	10.7%	21.4%	53.6%
Forestry and Wildlife	24	-	12.5	4.2	25.0	58.3
Environmental Technology	4	-	25.0	50.0	-	25.0

Although the number is comparatively small, the high out-of-state rate was explained as a function of greater employment opportunities in other states. The quality of their Environmental Technology program is well known and opportunities exist in contiguous regions.

Table 18
Placement Rates for Natural Science Programs
from Type C Regions

		N	Sponsor Area	Within Region	Contiguous Region	Non-Contig Region	Out of State
Region 4	Total	211	1.4%	24.1%	31.7%	24.6%	18.0%
Agricultural Technologies		159	-	23.3	31.4	26.4	18.9
Forestry and Wildlife		15	20.0	26.7	20.0	13.3	20.0
Dairy Food Science		25	-	24.0	40.0	20.0	16.0
Biological Lab Technology		12	-	33.3	33.3	25.0	8.4
Region 7	Total	114	1.7%	6.7%	14.9%	56.1%	21.0%
Natural Sci Gen		31	-	-	9.7	67.8	22.5
Agricultural Technologies		37	-	5.4	21.7	56.7	16.2
Food Services Technology		3	66.7	-	33.3	-	-
Laboratory Tech		7	-	14.3	14.3	28.6	42.8
Sanitation & Public Health		3	-	33.3	-	66.7	-
Wood Products; Food Proc & Animal Husbandry		33	-	9.1	12.1	54.6	24.2

The relative lack of Natural Science programs in the Community Colleges in Type C regions is readily apparent from placement distributions. Although Region 4 places more students in their (Capital) region, the larger percentages in contiguous, non-contiguous and out-of-state columns is similar to those of Regions 6 and 13, the Type A regions. For Natural Science programs, Regions 4, 6, 7 and 13 could have been considered one

regional type, either consisting totally of or dominated by upstate Agricultural and Technical Colleges with statewide recruiting and mission characteristics. While Placement Officers identified no major out-of-state employers, it is presumed that the less concentrated demand for the particular technology is a factor in the higher than might be expected out-of-state rates.

Since the number of placements from Natural Science programs in the Type D regions is small in each region, and no programs were reported from Regions 8 or 11, the regional data was combined, and is presented by program in Table 19.

Table 19
Placement Rates for Natural Science Programs
from Type D Regions

Regions	N	Sponsor Area	Within Region	Contiguous Region	Non-Contig Region	Out of State
2, 3, 9, 10 & 12	Total 102	61.8%	24.5%	3.9%	4.9%	4.9%
Agricultural-Horticultural Technologies	13	46.2	30.8	-	15.3	7.7
Forestry-Conservation	30	36.7	36.7	10.0	10.0	6.6
Food Service Technology	26	100.0	-	-	-	-
Laboratory Tech	31	58.1	32.2	3.2	-	6.5
Natural Resources	2	100.0	-	-	-	-

The above placement rates include combined data from the colleges of the five regions. The trend of Type D colleges to place within sponsor and planning region is continued by these programs. Conservation program graduates were most apt to be placed beyond their planning region (Region 10). These data contain placements from two Independent Colleges, but as noted previously, these particular Independent Colleges are locally oriented in recruitment and placement. All Independent College placements were within

the county in which each is located.

XI. Analysis by Program: Public Service Technologies

The placement rates for each Public Service program included in the Type A regions are presented below.

Table 20

Placement Rates for Public Service Programs from Type A Regions

		N	Sponsor Area	Within Region	Contiguous Region	Non-Contig Region	Out of State
Region 1	Total	87	-	75.9%	18.4%	1.1%	4.6%
Education							
Technologies	19	-	100.0	-	-	-	-
Police, Law							
Enforcement	41	-	70.7	26.8	-	2.4	
Recreation &							
Social Work	10	-	80.0	-	-	20.0	
Mortuary Science	17	-	58.9	29.4	5.9	5.9	
Region 6	Total	6	-	83.3%	16.7%	-	-
Police, Law							
Enforcement	6	-	83.3	16.7	-	-	

The college in Region 13 reported no placements in the Public Service Technologies. The data from the remaining two regions, although few in number from Region 6, show a consistency between them that was not present in previous technology areas. These data lead to the conclusion that Public Service graduates exhibit less outward mobility than graduates from other technology programs, but this finding must be tempered by the small number of placements. A larger Criminal Justice program may be forced to place more graduates beyond the planning region simply as a function of available regional opportunities.

The one Type B region reported 13 persons placed from their Recreation

and Social Work program. Of these, 2 (15.4%) accepted employment in the college's location county, 1 (7.7%) in a contiguous region, 3 (23.1%) in a non-contiguous region and 7 (53.8%) accepted placement out of state. This out-of-state rate is high, even for this Type B college, but the distribution pattern across the mobility categories is similar to patterns found in the other technology areas for this college.

The program placements rates for the Type C regions are presented below.

Table 21

Placement Rates for Public Service Programs
from Type C Regions

		N	Sponsor Area	Within Region	Contiguous Region	Non-Contig Region	Out of State
Region 4	Total	100	18.0%	55.0%	21.0%	5.0%	1.0%
Public Service, General		2	100.0	-	-	-	-
Education							
Technologies		34	11.8	61.8	17.6	5.9	2.9
Police, Law							
Enforcement		38	15.8	71.1	5.3	7.8	-
Recreation & Social Work		18	22.2	72.2	-	-	5.6
Fire Control							
Technology		3	33.3	66.7	-	-	-
Paralegal Asst		5	80.0	20.0	-	-	-
Region 7	Total	84	67.8%	8.3%	11.9%	5.9%	5.9%
Public Service, General		32	75.0	-	12.5	6.3	6.2
Education							
Technologies		10	80.0	20.0	-	-	-
Police, Law							
Enforcement		17	58.8	5.9	17.6	5.9	11.8
Recreation & Social Work		9	55.6	-	22.2	11.1	11.1
Fire Control							
Technology		3	66.7	-	33.3	-	-
Paralegal Asst		8	62.5	25.0	-	12.5	-
Mortuary Science		5	60.0	40.0	-	-	-

A comparison of the overall placement rate patterns for the two regions clearly shows the impact of two factors noted previously: the inclusion in Region 4 of an Agricultural and Technical College (the Agricultural and Technical College in Region 7 reported no Public Service program placements); and the inclusion, in Region 4, of a Community College that draws a majority of its students from outside its sponsor area. These two factors results in low sponsor area rates and higher within region rates. Region 7 lacks these characteristics for Public Service programs and the placement rates resemble Type D, Community College regions, more than the Type C, mixed college regional pattern.

However, the combined sponsor and region rate for both regions is over 70%. Education Technology graduates are the major share of the relatively high contiguous region rate from Region 4. The higher contiguous region rates from Region 7 involve small numbers of graduates, but the different outward mobility patterns are noteworthy for two programs: Recreation-Social Work, lower mobility in Region 4 and higher in Region 7; and Education, higher in Region 4 and lower in Region 7. Placement Officer opinions did not specifically speak to either of these programs so no explanation is available from the data.

The program placements for Type D regions are presented in Table 22.

Region 2 reported no placements from Public Service programs. The other regional totals were grouped in Table 22 because of the relatively small number in several individual programs and the relative consistency of the trends. The characteristic low mobility rate distribution of Type D regions, 85% or greater within the region, is also a finding for Public Service programs.

Fire Control program graduates display the highest rate of out-of-state placement but part of this is due to a border effect--allowing an

Table 22
Placement Rates for Public Service Programs
from Type D Regions

	N	Sponsor Area	Within Region	Contiguous Region	Non-Contig Region	Out of State
Regions 3, 8 & 9						
Total	132	82.5%	12.0%	3.0%	1.0%	1.5%
Public Service, General	27	90.1	-	9.9	-	-
Education Technologies	8	75.0	25.0	-	-	-
Police, Law Enforcement	46	80.4	15.2	2.2	2.2	-
Recreation & Social Work	14	71.4	28.6	-	-	-
Fire Control Technology	9	55.6	11.1	11.1	-	22.2
Early Child Care	22	90.1	9.9	-	-	-
Paralegal Asst	7	100.0	-	-	-	-
Industrial Safety	5	100.0	-	-	-	-
Regions 10, 11 & 12						
Total	185	76.2%	13.0%	2.2%	3.2%	5.4%
Public Service, General	9	100.0	-	-	-	-
Education Technologies	9	100.0	-	-	-	-
Police, Law Enforcement	100	66.0	16.0	4.0	6.0	8.0
Recreation & Social Work	20	65.0	30.0	-	-	5.0
Fire Control Technology	10	80.0	10.0	-	-	10.0
Public Adm, Management	5	100.0	-	-	-	-
Early Child Care	4	100.0	-	-	-	-
Human Services	23	95.7	4.3	-	-	-
Recreation, Leadership	5	100.0	-	-	-	-

out-of-state result but very little mobility in terms of miles. The same border effect is present in the out-of-state placements in Law Enforcement and Recreation-Social Work. Once again, the Independent Colleges included in these regions display very low outward mobility patterns.

For the most part, Public Service graduates display the greatest tendency to accept employment within the sponsor area and the planning region.

XII. Analysis of Out-of-State Placements

A policy issue may be raised regarding out-of-state placements. If state and local dollars are being invested in education for state and local residents and these graduates accept employment in another state, the return on the investment can become an issue. In order to identify the programs with higher out-of-state mobility and thus define this phenomenon with more precision, the out-of-state placement rates were examined by individual college program. Since no externally validated standard was known, an arbitrary standard or "trial acceptable rate level" was produced using the all-college average out-of-state rate for each Hegis technology area multiplied by 1.5. For example, the average out-of-state rate for all Business programs was 4.8%. Using the multiplier produces a standard for comparison of 7.2% (4.8×1.5). Each program within Business was compared to that standard. The results are shown in the following tables. Each program, the type of college, region, total number of program graduates and out-of-state placement rate are listed. Individual programs are included in the tables if they exceed the derived standard.

Table 23 displays the eight Business program titles that exceeded the derived standard. Twelve of the individual programs are from Agricultural and Technical Colleges, eight from Community Colleges and two from Independent Colleges. Eight regions are represented but colleges from Regions 7, 6, and 4 are the principal contributors. The rates for individual programs range from 7.3% to 44.5%. Only five programs have rates over 20%; two are Hotel/Restaurant Management and two are Communications Broadcasting, noted earlier for their greater out-migration placement trends.

Table 23

Business Programs with Higher Out-of-State Placement Rates

<u>Program Name</u>	<u>College Type</u>	<u>Region</u>	<u>Program total</u>	<u>Out-of-State%</u>
Gen. Business	ATC	6	27	25.9
Gen. Business	ATC	7	32	9.4
Accounting	ATC	6	14	14.3
Accounting	ATC	13	27	11.1
Marketing	ATC	4	26	11.5
Marketing	C.C.	4	26	7.3
Marketing	C.C.	4	26	11.5
Marketing	C.C.	7	8	12.5
Marketing	C.C.	10	11	18.2
Secretarial Science	ATC	6	32	18.8
Secretarial Science	ATC	7	33	15.2
Secretarial Science	C.C.	7	31	12.9
Communications/Broadcasting	ATC	7	21	14.3
Communications/Broadcasting	IND.	3	13	30.2
Communications/Broadcasting	C.C.	10	3	33.3
Communications/Broadcasting	C.C.	12	11	9.1
Hotel/Restaurant	ATC	4	26	11.5
Hotel/Restaurant Mgt.	ATC	6	10	10.0
Hotel/Restaurant	IND.	5	18	44.5
Hotel/Restaurant Mgt.	ATC	7	25	8.0
Applied Graphic Arts	C.C.	7	40	15.0
Court Reporter	ATC	13	10	10.0

[Business Programs Average; $4.8\% \times 1.5$ - derived standard of 7.2%]

Five of the six programs in Data Processing with rates above the derived standard of 11.6% are ATC programs (Table 24). The fewer program titles and generally lower enrollments in any one college, characteristics of this technology, are evident in these data.

Table 24

Data Processing Programs with Higher Out-of-State Placement Rates

<u>Program Name</u>	<u>College Type</u>	<u>Region</u>	<u>Program total</u>	<u>Out-of-State %</u>
Date Proc. General	ATC	4	17	17.6
Data Proc. General	ATC	6	8	12.5
Data Proc. General	ATC	13	17	11.7
Programmer	ATC	7	10	30.0
Programmer	C.C.	10	8	25.0
Operator/Equip. Maint.	ATC	13	13	23.1

[Data Processing average = $7.7\% \times 1.5$ = derived standard of 11.6%]

Table 25 details the greater number of program titles (14) as well as the relatively larger number based in community colleges that exceed the derived standard for Mechanical and Engineering technologies. The range of rates is also greater but, like Data Processing, many programs have relatively few graduates. For example, the two programs with 50% out-of-state rates each have two graduates and one from each was placed out-of-state.

Table 25

Mechanical and Engineering Programs with Higher Out-of-State Rates

<u>Program Name</u>	<u>College Type</u>	<u>Region</u>	<u>Program total</u>	<u>Out-of-State %</u>
Mech. & Engineering Gen.	ATC	1	17	17.6
Mech. & Enrineering Gen.	ATC	13	14	14.3
Arch. Drafting	ATC	13	36	16.7
Arch. Tech.	C.C.	10	10	20.0
Chem. Tech.	C.C.	8	19	21.1
Chem. Tech.	C.C.	4	2	50.0
Civil Tech.	ATC	13	12	33.3
Civil Tech.	C.C.	7	26	19.2
Civil Tech.	C.C.	10	7	14.3
Electro.-mechanical	C.C.	3	8	25.0
Mech. Tech.	ATC	4	26	19.2
Mech. Tech.	C.C.	4	6	16.7
Mech. Tech.	C.C.	2	32	18.8
Mech. Tech.	C.C.	2	2	50.0
Engineering Graphics	C.C.	7	14	21.4
Engineering Graphics	C.C.	3	8	25.0
Industrial Tech.	C.C.	3	10	20.0
Automotive Tech.	ATC	13	5	40.0
Const. Tech.	ATC	13	25	33.3
Const. Tech.	C.C.	9	13	15.4
Weld. Tech.	C.C.	7	5	20.0
Agric. Mech & Eng.	ATC	7	22	54.5
A/V Tech.	ATC	13	7	28.6
Model Making	C.C.	10	17	35.3
Non-Dest. Tech.	C.C.	4	11	72.7

[Mech. & Eng. average; $9.3\% \times 1.5 =$ derived standard of 14%]

Nine program titles were isolated in Health Technologies as above the derived standard (Table 26). Nursing was previously noted as a large contributor to out-migration. Eight other titles also contribute to higher rates in terms of numbers if not persons. The border region effect is evident in Regions 3, 8 and 11.

Table 26

Health Technology Programs with Higher Out-of-State Rates

<u>Program Name</u>	<u>College Type</u>	<u>Region</u>	<u>Program total</u>	<u>Out-of-State %</u>
Dental Hygiene	C.C.	8	18	33.3
Dental Assistant	C.C.	3	12	25.0
Dental Lab Tech.	C.C.	3	4	25.0
Medical Lab Tech.	ATC	13	23	17.4
Medical Lab Tech.	ATC	7	12	16.7
Medical Lab Tech.	IND	3	6	50.0
Medical Lab Tech.	C.C.	8	6	16.7
Medical Assistant	ATC	13	32	18.8
Medical Assistant	C.C.	3	10	30.0
Medical Assistant	C.C.	8	6	16.7
Nursing, RN	ATC	6	49	26.5
Nursing, RN	ATC	13	56	23.2
Nursing, RN	ATC	7	41	17.1
Nursing, RN	C.C.	8	52	19.2
Nursing, RN	C.C.	11	66	18.2
Chem. Lab Tech.	ATC	6	7	28.6
Chem. Lab. Tech.	ATC	13	19	15.8
Radiology Tech.	C.C.	12	9	66.7
Inhalation Therapy	C.C.	9	19	26.3

[Health Services average; $9.7\% \times 1.5 =$ derived standard of 14.6%]

Table 27

Natural Science Programs with Higher Out-of-State Placement Rates

<u>Program Name</u>	<u>College Type</u>	<u>Region</u>	<u>Program total</u>	<u>Out-of-State %</u>
Forestry & Wild Life	IND	5	24	58.3
Environmental Tech.	IND	5	24	25.0
Natural Sci. Gen.	ATC	7	31	22.5
Lab Tech.	ATC	7	7	42.8

[Natural Science average $14.6\% \times 1.5 =$ derived standard of 21.9%]

The relatively higher overall average of Natural Science programs coupled with relatively fewer number of programs results in only four being identified as higher out-of-state contributors (Table 27). The impact of the Independent College is also evident.

Table 28

Public Service Programs
With Higher Out-of-State Placement Rates

<u>Program Name</u>	<u>College Type</u>	<u>Region</u>	<u>Program total N</u>	<u>Out-of-State %</u>
Recreation & Soc. Work	ATC	1	70	20.0
Recreation & Soc. Work	C.C.	7	7	14.3
Police, Law Enforcement	C.C.	7	17	11.8
Police, Law Enforcement	C.C.	10	13	7.7
Police, Law Enforcement	C.C.	11	18	15.7
Police, Law Enforcement	C.C.	12	12	16.7
Fire Control Tech.	C.C.	8	3	33.3
Fire Control Tech.	C.C.	10	9	11.1

[Public Service average; $4.8\% \times 1.5 =$ derived standard of 7.2%]

Only three titles were identified from the generally lower out-of-state program rates associated with the Public Service Technologies (Table 28). Only one is an ATC program, and the number of program graduates tends to be small.

Discussion. The use of an arbitrary standard of 1.5 times the overall average rate for each technology resulted in a large number of programs that exceeded the respective derived standard.

Before value judgments can be rendered more information is needed. A policymaker might reason, as do many Placement Officers, that it is better for a technician to be employed out-of-state than to be under or unemployed in-state. Economists should also seek information as to the extent to which technicians trained in other states accept employment in New York.

Within these individual programs are explanatory factors such as the border effect and on-campus recruitment. It is not known how many of these persons were initially out-of-state residents. Neither do we know the personal reasons involved in these employment decisions or how lasting the out-migration will be.

This human side of placement is one dimension of Phase II of this project. Individuals will be contacted to determine what personal values and aspirations were active in employment decisions and to what extent out-of-state placement persevered. These additional data will be necessary to the consideration of policy questions related to the findings in this report.

These data are unable to substantiate any given out-migration placement rate as being acceptable. If 4.8% is the average for Business and Public Service, should 10% or 15% be equally acceptable for other technologies? It appears that the nature of the program, that is the scope of the demand for graduates from certain programs, is indeed related to the outward migration. In this age of technology, ease of travel, and economic interdependence among nations, valid reasons are difficult to find to limit career choice. Yet the degree of out-of-state mobility can be interpreted by some as alarming. The phenomenon deserves further study.

XIII. Analysis of Placements by Gender

Twenty-one (21) of the 28 colleges were able to supply placement data differentiated by gender of graduate. In general, the male/female distributions followed traditional patterns associated with the occupational fields: Secretarial Science and Health programs generally and Nursing programs specifically were predominantly female, and most Engineering Technology program graduates were predominantly male. Several trends are, however, worth noting.

It is not uncommon to find that females comprise a majority of all Business program graduates. The high enrollment, traditionally female, Secretarial Science programs tend to explain this. However, a number of colleges now have Accounting and Marketing programs of which the majority are female. Also the number of females in Police and Law Enforcement is apparently increasing.

The data were further examined for outward mobility differences associated with gender within individual programs. In most programs the male/female ratios across the five geographic mobility categories were proportional to the male/female totals for each program. Exceptions were found in General Business programs at two colleges, and Civil Technology and Hotel and Restaurant Management at a third college. In both General Business programs, women were more likely than men to be placed beyond the college's planning region. At another college, the only female graduate from the Civil Technology program was also the only graduate placed out-of-state. At the same college, 76% (4) of the female graduates in Hotel Management were placed out-of-state compared with 33% of the male graduates. No other gender-related mobility trend differences were significantly different within individual programs.

XIV. Summary of Major Trends

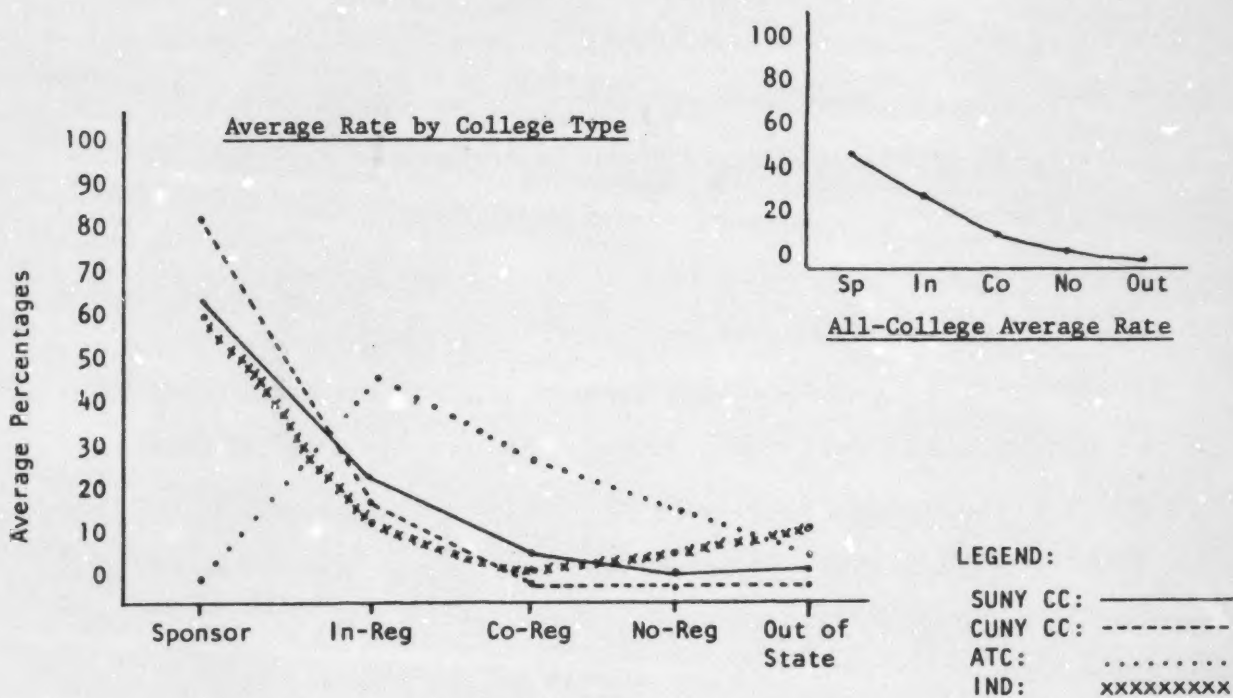
Impact of College Type on Placement Trends

A straightforward categorization of data by each planning region did not result in the most useful method to examine placement trends. This was due in part to the number of colleges that were unable to be included in the sample, but also because the 13 planning regions are not comparable in terms of employment opportunities, types of colleges, or programs offered. A grouping of regional data based on the type of college reporting from each region was utilized because of similarities of placement trends among types of colleges.

As a group, Community Colleges exhibited higher placement rates within their sponsor area, consistent with their mission. Agricultural and Technical Colleges lack a local sponsor, and consistent with their state-wide mission, exhibited greater outward geographic mobility. Independent Colleges varied in placement trends; three colleges had records of very high local area placements and one very wide placement mobility trends. Exceptions to these general trends appeared based on each college's geographic location, and student county of origin. For example, placement trends of Farmingdale Agricultural and Technical College resembled those of Community Colleges more than upstate Agricultural and Technical Colleges. Similarly, Hudson Valley Community College exhibited lower placement rates within their sponsor area but when sponsor and within-region (Capital District) rates were combined, they closely resembled rates of other Community Colleges. In both cases the geographic proximity to employment opportunities and proportion of students recruited from the region are explanatory factors. In general, when local and regional differences are acknowledged, two-year college placement trends reflect the different missions of each college.

The data from all colleges in Business, Data Processing, Health and Public Service Technologies displayed similar trends of outward mobility. At least 75% of all placements were accounted for by sponsor and region categories. But these all-college data also show type-of-college differences. Figure 1 uses Business placement data to graphically depict the trend lines exhibited by the four types of colleges. Agricultural and Technical College trends are clearly different.

Figure 1
Business & Commerce Placement Rates



Natural Science and Engineering Technology graduates exhibited greater outward mobility and different trend lines as depicted in Figures 2 and 3.

Figure 2

Mechanical Engineering Placement Rates

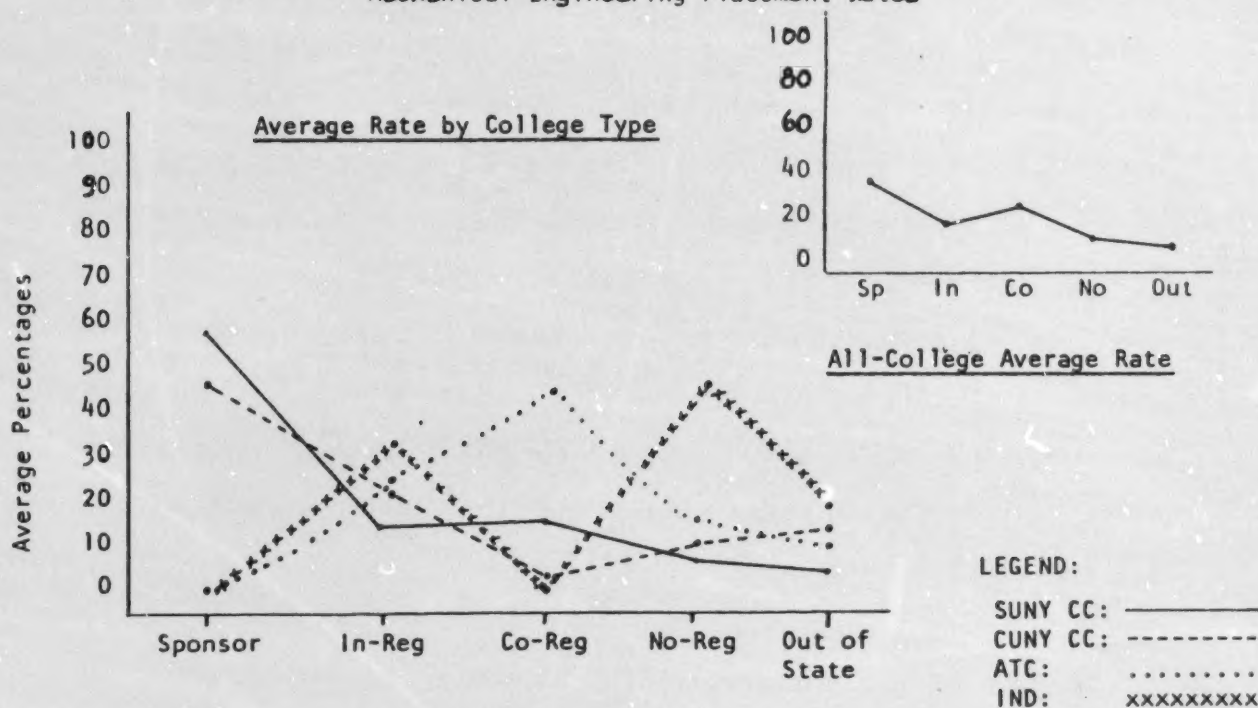
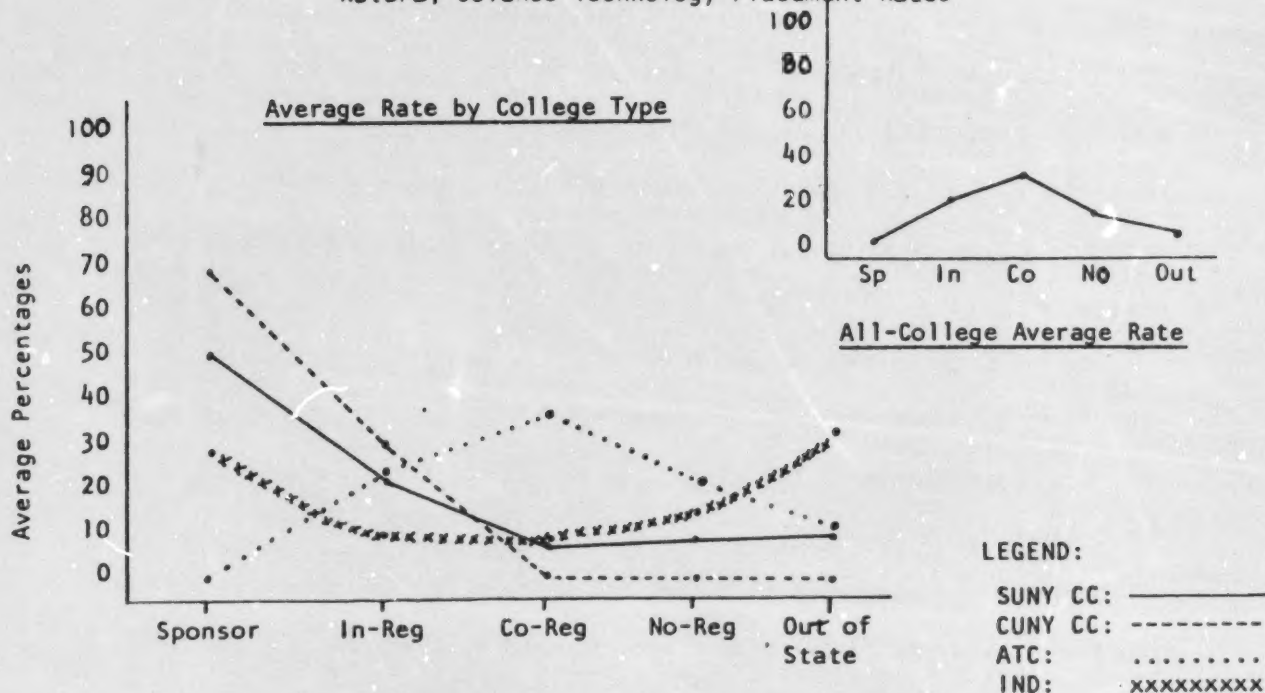


Figure 3

Natural Science Technology Placement Rates



Distribution of programs across college types is sufficient to make the all-college trend in Engineering somewhat similar to that of Business graduates (Figure 1). However the trend lines by college type show differences hidden by statewide averages. Trend lines in Figure 2 show the impact of the demand for specialized Engineering Technology graduates. In the words of several Placement Officers, "They go where the jobs are!"

The trend lines change again for Natural Science data (Figure 3). The higher proportion of ATC placements included in these data significantly change the all-college trend line. Trend lines exhibited by different types of colleges are similar to Business, but the ATC influence of higher placements within region and higher out-of-state rates from one Independent College cause differences.

Placement Trends by Program

Previous sections presented detailed placement rates for individual programs in each technology area. In the Business area a large number of programs were significant contributors to contiguous region placements, fewer to non-contiguous and out-of-state placements. General Business, Hotel, Court Reporting and Communications and Broadcasting were programs with more consistent outward mobility trends. Secretarial Science, Graphic Arts, Photography and Marketing tended to be contributors to contiguous and non-contiguous rates but exceptions exist at individual colleges and regions.

General Data Processing and Programming were principal outward mobility contributors in Data Processing Technologies but the highest out-of-state rate was associated with the speciality field of Operator and Equipment Maintenance.

Engineering Technology graduates were generally more mobile as a group since most programs contributed to the outward mobility rates. Chemical,

Electromechanical, Construction, Automotive, Graphics and General Engineering programs were all primary contributors. The more unique specialities of Modelmaking, Non-destructive Testing and Agricultural Engineering were among those with highest out-of-state rates.

In the Health Technologies, Dental Medical Lab, Chemical Lab and Radiology programs exhibited higher outward mobility. But overall, Nursing graduates were most apt to go out-of-state; Nursing accounted for 65% of all Health Technology out-of-state placements. This may be a reflection of the demand for RN's nationally and/or the attractiveness of the industry within the state.

Many of the Natural Science graduates, like Engineering graduates, accepted placement in contiguous regions. Veterinary Science, Agricultural Technologies and Forestry program graduates were more likely than others to go out-of-state.

Public Service Technologies overall exhibited the least outward mobility, 17.7% placements beyond the planning region. Primary contributors to contiguous region rates were Police, Law Enforcement, Fire Control and Mortuary Science programs. Recreation-Social Work graduates, although small in numbers, were also a primary outward mobility contributor.

XV. Conclusions and Data Implications

The presentation and analyses of placement rate data from the 28 cooperating colleges lead to a number of concluding observations:

- Foremost, data show that regional comparisons can be made but only with an understanding that all regions are really not comparable. The inclination to place value judgments on regional comparisons alone should be avoided. Each region has its own set of program related characteristics that impact the placement mobility of postsecondary occupational program graduates.

- The geographic concentration of employment opportunities in various fields and the extent of on-campus recruitment were also active factors. On-campus recruitment by employers was perceived to play a major role in placement decisions by about 30% of the Placement Officers. It was noted by a number of Placement Officers as a critical factor for specific program placements such as Nursing, Chemical and Electro-mechanical Technology, Computer-related Technologies and certain unique technologies. Although the scope and frequency of recruitment visits were perceived to be decreasing at half of the colleges, about 30% are experiencing increases. The number of recruitment visits annually at any one college ranged from 2 to 86. About half of the colleges report over 30 recruiting visits annually.
- Hotel and Restaurant and Travel and Tourism programs have somewhat unique relationships with employers that provide greater opportunities for outward mobility. Some students find their own opportunities in specialized fields--intrigued by higher salaries, growth promotional opportunities or the desire to see another part of the world that is made possible by demand for their newly acquired skill.
- The different mission of varying types of colleges is a fact that manifests itself in county of origin of their students. This study does not have data on which graduates came from which county or the extent to which graduates from specific programs accept employment in their home area. It is the opinion of a large majority of Placement Officers that the graduate's county of origin is a factor in the employment decision for at least half of the students; one-third believe it to be an important factor in more than 75% of the placement decisions.
- There appears to be a direct relationship between the percentage of students who reside in the same county as their college and the percentage of placements that occur in the sponsor area. Community Colleges and some Independent Colleges who recruit most of their students from the sponsor county and region tend to have high placement rates in the sponsor area and region. Community Colleges that recruit more students from the region, but not their sponsor county, tend to place greater numbers in the region. Also the one Agricultural and Technical College that draws most of its students from its region also places a majority within region. The region is also a highly populated area with a wide diversity of employment opportunities. Other Agricultural and Technical Colleges draw significantly fewer students from their planning region, have significantly fewer employment opportunities in the region and place significantly fewer graduates within their region.
- The county of origin factor may translate to mean that students who essentially leave home to attend college are more apt to display greater outward mobility from the college in accepting employment. The geographic location of the college is also a factor since students at several

colleges would be unable to be placed locally because employment opportunities are lacking. This same scenario holds true for the one Independent College in the study sample that recruits from across the state and out-of-state, and is located in a rural region with relatively few employment opportunities.

- Placement Directors feel very differently about the influence of faculty on employment decisions as compared to county of origin. Over half believe that faculty influence the placement decisions for less than 25% of the graduates.
- The definition of locally relevant employment opportunities tends to change with the program as well as the college. To most it means where the jobs are for a particular program, artificial geographic boundaries notwithstanding. There is a border geography effect on placements that is explained by a college's proximity to specific major employers in specific fields. Examples include an out-of-state hospital or an industry located in a contiguous region that also happens to be within commuting distance of a graduate that resides in the college's planning region. It is relatively common for residents of Long Island to work in New York City, residents of New York City to work in New Jersey, residents of Chemung or Broome Counties to work in Pennsylvania and residents of Putnam or Dutchess Counties to work in Connecticut.
- Region 10, the Rochester metropolitan area, and to a lesser extent the Buffalo area, Region 12, appear to be receivers of placements more than other regions. This is partly a function of recruitment but more obviously a function of where more opportunities in certain technologies are located. Region 10 was often listed as a relevant if not local region of opportunities for chemical and electro-mechanical technicians.
- The national employer effect, although not major, was also noted. When a major employer with facilities across the nation, if not overseas, is also located in a college's region, it may recruit graduates for its local facility as well as provide employment opportunities beyond the region or the state.
- Using an arbitrary standard (1.5 x average) for each technology resulted in identification of numerous programs above the standard. This raised questions regarding related personal values and aspirations, acceptability of an out-migration placement rate, and other policy considerations.
- Few significant gender-related mobility trend differences were evidenced by data.

These data results and their implications will serve as the basis for Phase II research activity. Major investigations will focus on out-of-state migration, successful program leavers, and validation of stated trends.

APPENDIX A
Letter and
Survey Instruments

State University of New York at Albany

December 9, 1982

Dear Colleague:

The Two-Year College Development Center, in cooperation with the Bureau of Grants Administration, is engaged in a study of the geographic mobility of completers of postsecondary occupational education programs. One objective of the project is to compile regional and statewide geographic placement trends by program area. Another is to identify, to the extent possible, reasons for such trends. These data will assist in validating policy regarding locally relevant employment needs necessary for new program planning and approval.

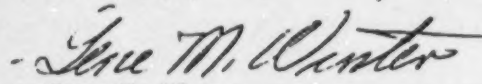
We respectfully request your help. If the information mentioned above is available anywhere, we feel that the placement director has it or knows where it can be found. We know many of you do excellent placement reports annually in a format that has meaning for your local constituencies. We cannot ask you to develop new data, but will you share what you already have and, in addition, respond to a questionnaire that seeks your knowledge and opinions related to reasons for the geographic mobility of completers?

Enclosed are two instruments: the first is a set of report forms (blue) modeled after the NCES Form 2300, Degrees and Other Formal Awards Conferred, and the second, a questionnaire for directors of placement (green). We are requesting data for the year ending June 1981 since we know that 1982 placement statistics may not yet be complete. If you could complete the forms for those programs in which you had completions, you would greatly assist this project. We know that this may be a difficult task. If it will help, we will accept raw data, worksheets, cards or reports in other formats if the elements exist to allow us to make the transformation of the data in our office. Also, we will gladly accept partial data rather than none. We realize that it may take some time to pull last year's records together. We would like to begin compiling data during the late winter and hope that a return date of February 18, 1983 for the completed forms is reasonable.

We are requesting cooperation in this project from all two-year colleges in New York State in order to have the most comprehensive information possible. We hope that you will agree to help us. Please indicate your willingness to work with us by returning the enclosed Participation Notification Form (yellow) as soon as possible. If we can assist in gaining local administrative clearance or can answer any questions, please contact me. An information copy of this letter has been sent to your President.

Thank you for your consideration.

Sincerely yours,



Gene M. Winter
Director

encs.

cc: Campus President |

Draper 306, 135 Western Avenue, Albany, New York 12222, 518/455-6271

GEOGRAPHIC MOBILITY STUDY
VEA 53-83-0347

Participation Notification

☐ I will be able to assist with this study.

☐ I will not be able to assist with this study.

Conditions/requests for securing college approval: _____

Conditions/requests regarding data compilation: _____

Signed: _____

College: _____

Please return this form by December 20 to:

Gene M. Winter, Director
Two-Year College Development Center
State University of New York at Albany
135 Western Avenue, Draper 306
Albany, New York 12222

Thank you for your consideration.

GEOGRAPHIC MOBILITY SUMMARY FORM
VEA 53-83-0347

#1

Directions: The attached forms request placement information on completers of occupational and technical programs for the year ending June 1981. The discipline specialties and Regis codes are those used in 1981 for NCES reporting.

The geographic categories are defined as follows:

- ...within sponsor/service area - county or counties that are sponsors of the college; CUNY colleges should read this column as New York City. Independent colleges and Agricultural and Technical colleges should read this column as within county in which the college is located.
- ...within region - occupational planning region but outside county or city used in the sponsor area column.
- ...contig. region - within a planning region contiguous to the college's planning region.
- ...non-contig. region - self-explanatory
- ...out-of-state - self-explanatory

If you have no placements in a discipline specialty simply mark NP in the total column.

Please use the bottom of each program form to add specific location and employer identification, if readily available, that would further specify the geographic location of a significant number of placements that might be reported in any column.

For example: an upstate college may report 50 percent of its placements in hotel and restaurant management in a non-contiguous region. If it is known that nearly all were placed in New York City, that information would be helpful. Similar notations for out-of-state placements would also add significantly to our information.

If there are questions or problems, please contact us (518 455-6271). We sincerely appreciate your time and effort in helping us with this project.

Gens M. Winter, Director
Two-Year College Development Center
State University of New York at Albany
135 Western Avenue, Draper 306
Albany, New York 12222

BUSINESS AND COMMERCE TECHNOLOGIES

Geographic Mobility Summary Form
Two-Year College Development Center, SUNY-Albany

College		Geographic Categories												
Code	Discipline Spec.	Placement Totals			Service Area		Within Region		Contig Region		Non-Contig Region		Out-of-State	
		Total	M	F	M	F	M	F	M	F	M	F	M	F
5001	Business and commerce technologies, general													
5002	Accounting technologies													
5003	Banking and finance technologies													
5004	Marketing, distribution, purchasing, bus., & industrial management tech.													
5005	Secretarial technologies (include office machine training)													
5006	Personal service tech. (stewardess, cosmetologist, etc.)													
5007	Photography technologies													
5008	Communications and broadcasting tech. (radio/television, newspapers)													
5009	Printing and lithography technologies													
5010	Hotel and restaurant management technologies													
5011	Transportation and public utility technologies													
5012	Applied arts, graphic arts, & fine arts technologies (inc. advertising design)													
5099	Other, specify													
TOTAL BUSINESS AND COMMERCE TECHNOLOGIES														

Notations of significant locations and/or employers: _____

DATA PROCESSING TECHNOLOGIES

Geographic Mobility Summary Form

Two-Year College Development Center, SUNY-Albany

College		Geographic Categories												
Code	Discipline Spec.	Placement Totals			Service Area		Within Region		Contig Region		Non-Contig Region		Out-of-State	
		Total	M	F	M	F	M	F	M	F	M	F	M	F
5101	Data processing technologies, general													
5102	Key punch operator and other input preparation technologies													
5103	Computer programmer technologies													
5104	Computer operator and peripheral equipment maintenance technologies													
5105	Data processing equipment maintenance technologies													
5199	Other, specify													
TOTAL DATA PROCESSING TECHNOLOGIES														

Notations of significant locations and/or employers:

HEALTH SERVICES AND PARAMEDICAL TECHNOLOGIES

Geographic Mobility Summary Form Two-Year College Development Center, SUNY-Albany

College		Geographic Categories												
Code	Discipline Spec.	Placement Totals			Service Area		Within Region		Contig Region		Non-Contig Region		Out-of-State	
		Total	M	F	M	F	M	F	M	F	M	F	M	F
5201	Health services assistant technologies, general													
5202	Dental assistant technologies													
5203	Dental hygiene technologies													
5204	Dental laboratory technologies													
5205	Medical or biological lab assistant technologies													
5206	Animal laboratory assistant technologies													
5207	Radiologic technologies (X-ray, etc.)													
5208	Nursing, R.N. (less than 4-year program)													
5209	Nursing, practical (L.P.N. or L.V.N.)													
5210	Occupational therapy technologies													
5211	Surgical technologies													
5212	Optical technologies													
5213	Medical record technologies													
5214	Medical assistant & medical office assistant tech.													
5215	Inhalation therapy technologies													
5216	Psychiatric technologies													
5217	Electro diagnostic technologies													
5218	Institutional management tech. (rest home, etc.)													
5219	Physical therapy technologies													
5299	Other, specify													
TOTAL HEALTH SERVICES AND PARAMEDICAL TECH.														

Notations of significant locations and/or employers: _____

MECHANICAL AND ENGINEERING TECHNOLOGIES

Geographic Mobility Summary Form
Two-Year College Development Center, SUNY-Albany

College		Geographic Categories												
Code	Discipline Spec.	Placement Totals			Service Area		Within Region		Contig Region		Non-Contig Region		Out-of-State	
		Total	M	F	M	F	M	F	M	F	M	F	M	F
5301	Mechanical and engineering technologies, general													
5302	Aeronautical and aviation technologies													
5303	Engineering graphics													
5304	Architectural drafting technologies													
5305	Chemical technologies (include plastics)													
5306	Automotive technologies													
5307	Diesel technologies													
5308	Welding technologies													
5309	Civil technologies													
5310	Electronics and machine technologies													
5311	Electromechanical technologies													
5312	Industrial technologies													
5313	Textile technologies													
5314	Instrumentation technologies													
5315	Mechanical technologies													
5316	Nuclear technologies													
5317	Construction and building technologies													
5399	Other, specify													
TOTAL MECHANICAL AND ENGINEERING TECHNOLOGIES														

Notations of significant locations and/or employers: _____

NATURAL SCIENCE TECHNOLOGIES

Geographic Mobility Summary Form
Two-Year College Development Center, Albany

College		Geographic Categories												
Code	Discipline Spec.	Placement Totals			Service Area		Within Region		Contig Region		Non-Contig Region		Out-of-State	
		Total	M	F	M	F	M	F	M	F	M	F	M	F
5401	Natural science technologies, general													
5402	Agriculture tech. (include horticulture)													
5403	Forestry and wildlife tech. (include fisheries)													
5404	Food services tech.													
5405	Home economics tech.													
5406	Marine and oceanographic technologies													
5407	Laboratory tech., general													
5408	Sanitation and public health inspection tech. (environment health tech.)													
5499	Other, specify													
TOTAL NATURAL SCIENCE TECH.														

Notations of significant locations and/or employers: _____

PUBLIC SERVICE RELATED TECHNOLOGIES

Geographic Mobility Summary Form
Two-Year College Development Center, SUNY-Albany

College		Geographic Categories												
Code	Discipline Spec.	Placement Totals			Service Area		Within Region		Contig Region		Non-Contig Region		Out-of-State	
		Total	M	F	M	F	M	F	M	F	M	F	M	F
5501	Public service technologies, general													
5502	Bible study or religion-related occupations													
5503	Education tech. (teacher aide and 2-year teacher training programs)													
5504	Library assistant technologies													
5505	Police, law enforcement, corrections tech.													
5506	Recreation and social work related tech.													
5507	Fire control technology													
5508	Public administration and management tech.													
5599	Other, specify													
TOTAL PUBLIC SERVICE-RELATED TECHNOLOGIES														

Notations of significant locations and/or employers:

PLACEMENT DIRECTOR QUESTIONNAIRE

#2

GEOGRAPHICAL MOBILITY STUDY

Two-Year College Development Center
State University of New York at Albany

To be completed after
Geographic Mobility
Summary Form.

Name of Person Completing Form _____

College _____

1. Do you have records or any placement information which are similar to the items on the Geographic Mobility Study form but deal with program leavers?

____ Yes ____ No

If yes, briefly describe. _____

2. How do you define "locally relevant employment opportunities" for your college? _____

3. Does this definition change for certain programs? ____ Yes ____ No

If yes, please identify the program and the change(s). _____

4. Given that a significant number of your graduates of one or more of your programs accepted positions in a certain geographic area (i.e., nurses to Texas, engineers to Connecticut), do you have information that might indicate why certain placement trends occurred?

(Please name the program and the factor(s) that you feel were active.) _____

5. Did on-campus recruitment by business and industry play an active role in geographic mobility?

☐ It was a major factor.
☐ It was a minor factor.
☐ It was not a factor.

Please explain (if not mentioned in #4 above): _____

6. How would you characterize the scope and frequency of business and industry on-campus recruitment activities?

a) ☐ increasing ☐ decreasing ☐ no change

b) ☐ in all fields ☐ mainly in the following fields:

☐ business; ☐ health; ☐ data processing
☐ natural science; ☐ engineering technologies

7. Approximately how many recruitment visits occurred last year: _____

8. To what extent do you think county of origin plays an active role in the placement decisions of graduates?

☐ for less than 10 percent of the graduates
☐ for 10 to 25 percent of the graduates
☐ for 25 to 50 percent of the graduates
☐ for 50 to 75 percent of the graduates
☐ for more than 75 percent of the graduates
☐ unable to estimate

9. To what extent do you feel faculty members influence the placement decisions of graduates?

☐ for less than 10 percent of the graduates
☐ for 10 to 25 percent of the graduates
☐ for 25 to 50 percent of the graduates
☐ for 50 to 75 percent of the graduates
☐ for more than 75 percent of the graduates
☐ I do not know.

10. Did significant shifts in local employment opportunities during 1981 impact the geographic mobility of June 1981 placements?

____ Generally, yes ____ Generally, no

If yes, please specify: _____

11. Please add any other information or opinions that would help explain geographic mobility patterns of graduates of any selected program(s).

Thank you for your assistance.

Please return this form with the Geographic Mobility Summary Forms by
February 18, 1983 to:

Dr. Gene M. Winter, Director
Two-Year College Development Center
State University of New York at Albany
135 Western Avenue, Draper 306
Albany, New York 12222

APPENDIX B
Planning Region Map

OCCUPATIONAL EDUCATION PLANNING REGIONS

